Electrical Home Modernization

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APRIL, 1938 • PRICE $1.50

INTRODUCTORY

In May, last year, ELECTRICAL MERCHANDISING published for the industry a special "Electrical Home" Issue devoted to a complete and exhaustive review of the materials and merchandise which the electrical industry has made available for new home building. Addressed to builders, architects, utility companies and potential home builders, it was, in effect, an "Electrical Home in Print." Many thousands of those copies are still in daily use throughout the country.

It is our intention and purpose in this second special issue to provide as complete a working manual for the industry on the subject of "Electrical Home Modernizing" as last year's job did for the new home. There are some 22,000,000 homes connected to power company lines in the country—all of them in varying degrees electrified and many of them with some experience with the comfort, convenience and economy of home appliances. We would like to bring to them an even greater picture of the benefits of home modernization the electrical way.

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ELECTRICAL MERCHANDISING

HOWARD EHRLICH
Executive Vice-President

H. W. MATEER
Manager

L. E. MOFFATT
Editor

LAURENCE WRAY
Managing Editor

ANNA A. NOONE
Home Appliance Editor

HARRY PHILLIPS
Art Director

MARGUERITE COOK
Market Analyst

TOM F. BLACKBURN
Chicago Editor

CLOTILDE GRUNSKY
Pacific Coast Editor

ELECTRICAL MERCHANDISING

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B. R. Putnam, Treasurer — D. C. McGraw, Secretary — A. W. Morrison, Circulation Manager

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The services of Electrical Testing Laboratories in a confidential capacity are available for determination of performance and quality

Know by Test

ETL

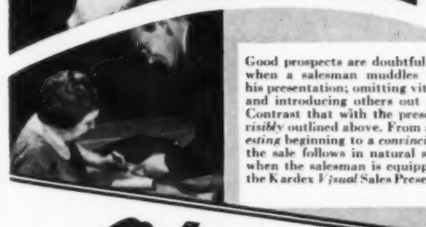
ELECTRICAL TESTING LABORATORIES, 80th STREET AND EAST END AVE., NEW YORK

Forty-Two Years in the Service of the Electrical Industry

HOW YOU CAN INCREASE APPLIANCE SALES!

Better tasting meals and...
Better for you!
Special Gift!
electric ovens retain the health-ful juices and vitamins in all foods

Ranges or Radios—Washers or Water Heaters—Refrigerators or Ironers . . . Commercial and Consumer sales *presentations* with the Kardex *Visual* Sales Presentation *command attention* and *deliver sales!*



Good prospects are doubtful "sales" when a salesman muddles through his presentation; omitting vital facts, and introducing others out of turn. Contrast that with the presentation *visibly* outlined above. From an *interesting* beginning to a *convincing* close the sale follows in natural sequence when the salesman is equipped with the Kardex *Visual* Sales Presentation.

Begin with this: Are your salesmen Helped or Hindered by their Sales-Tools?

THERE'S no mystery in deciding whether or not your salesmen are handicapped, in their sales efforts, by lack of *organized* sales help.

HOW TO TELL

Simply gather the material with which your salesmen are expected to make sales. Is it a neat "package"? Will it enable your salesmen to make a good appearance; attention compelling approach; logical, interesting, feature-by-feature, product story; and *action* close? Or, does it consist of a *more or less* related series of advertising folders? Is it a "canned" sales talk built around these folders? Is it perhaps a "big easel" or picture "projecture" sales story built around a miscellaneous assortment of reference material?

WHAT'S WRONG

You yourself can see with a glance whether your salesmen *can* make the most of their sales effort. Could *you* make a convincing sales presentation that would hold the prospect's interest and sway the *on the fence* to *on the dotted line* with the material available?

A SIMPLE SOLUTION

You can *now* make it possible for every salesman, *new* and *old*, to effectively apply the sales strategy which you know produces sales!

Under your direction, your salesmen will carry action and drama through their entire presentation . . . believably stress owner benefits . . . create a buying atmosphere . . . conjure a picture of quality . . . bring home disadvantages of inferior products and services . . . establish pride of ownership . . . forcefully cite local testimonials . . . clearly explain simplicity of operation, use, and service . . . test their sales-progress at each point . . . and use *pictures* to *prove* their story.

THE KARDEX VISUAL SALES PRESENTATION

Remington Rand Kardex *Visual* Sales Presentations offer the ideal answer to executive sales direction of field salesmen.

Step-by-step the logical sales sequence of your product's appeal are graphically pictured on Kardex visible-edge cards. A *complete* sales story is told at every interview. No vital facts are omitted or told, with lessened effectiveness, out of turn. It is a simple matter to refer back to any point because the *visible edge* is the *index* of important sales-features. Your salesmen are not burdened down with disordered miscellaneous material. Your salesman's story is clear, impressive, and concise. No time wasted at each interview means *more* interviews, more sales and more money. Your salesmen *will use*, and be helped by, *this* modern sales assistant. . . . Manpower becomes salespower. Turnover is decreased—satisfied salesmen don't quit or stray to competition!

FLEXIBILITY and ECONOMY

The *one* Kardex unit may successively serve any number of product presentations. Simply remove one and substitute another. All the matter of a few seconds.

A most important feature of any sales plan is the proper use of testimonials. With Kardex, testimonials may be localized even for *city sections* at very little extra cost. Individual Kardex cards are quickly changed.

OF MEN AND MOUTHS

Just off the press is a grand new eight page, illustrated, booklet dealing with successful sales planning: the "men" who direct, and the "mouths" that deliver. *Sales-appeals* are dealt with in a manner of interest to all who want to increase Appliance Sales!

You have sales problems and will want to see "OF MEN AND MOUTHS" and get complete and detailed information on how *inexpensively* and effectively *your* salesmen may be equipped with Kardex *Visual* Sales Presentations, so send in the coupon *today*.

OK.. it's from Remington Rand

KARDEX *Visual* SALES PRESENTATION

Remington Rand Inc.
Dept. EM 40
Buffalo, New York.

Please send me my free copy of "OF MEN AND MOUTHS." I am particularly interested in Sales presentations for Utilities ☐, Manufacturers ☐, Dealers ☐, Distributors ☐.

Name .....

Company .....

Address .....

City & State .....

USING

By Gera E. S

MY GOOD friend, Frank Schneller, reports the case of two policemen who were carchasing Illinois robbers and found themselves on the wrong road, but, because they were making such good time, they decided to keep going. I've known a few salesmen like that—they don't know where they're going, but they're on their way. They fail to turn back to the right selling track. They don't take time to get sales directions. And they damn the fact that they fail.

Selling is an honorable profession in which intelligence counts. The public is hungry for homemaking education, from garret to basement. The true appliance salesman, recognizing it, conditions himself expertly as an educator. In his active selling day, he hasn't too much time for study. He needs a source of concentrated information. He wants a digest of pertinent facts; unbiased, simple, all-embracing, to which he can refer, and organized for swift, authoritative use in front of the prospect.

Again this year and in this issue, *Electrical Merchandising* supplies that. It is a road map which, studied and applied, will assure the salesman that he is on the right selling track.

Its information will supply the confidence, both to him and the prospect, that a right buying decision is being made. It is ably done by the best technicians, working painstakingly for a series of weeks, to concentrate the most authoritative data in the most useful form. It is a distinct improvement as a reference work and useful selling tool, compared with the pacesetting Electrical Home issue in May of last year, in the inauguration of which *Electrical Merchandising* signally served the industry and set a new tone in trade journalism.

Within this April issue there is a wealth of easily digestible data which, properly studied and applied, will make the electrical appliance salesman an educator and authority to whom any interested prospect, either from the standpoint of home modernization or new construction, will confidently listen. It is a text from which the salesman can persuasively present his selling story without bias and with greater selling conviction. It is a honey! My hat is off to the editors and all of those nationally-recognized leaders who brought it into being for we fellows on the sales line. It can be organized to be useful for any purpose, or appliance that is in the range of our selling activities. And it is boiled down so we don't have to waste time studying a mass of unrelated information. It has the power to make appliance salesmen expert educators in a short time. It is therefore so valuable that we should never be without a copy throughout the year, and we should not neglect to make of it our most important selling tool.

We have a great selling year—if we only think so. There is no recession in wants, desires, nor selling opportunities. *There needs to be a recession in fear*—for fear makes cowards of us all. A few flashes:

Such authorities as Grimm, Babson, Hecht, Schmidt, are in accord that 6,000,000 new homes are needed merely to restore the drag of new residential construction caused by the frightened decade that has passed. National research indicates that five per cent of families intend to build anew, many to get away from the doubling-up corrosion of living with relatives. This damned up urge will spill forward any time, probably in 1938, and will create a tremendous market because people want to live electrically.

Nearly twenty per cent of families have the need for home modernization in some form from attic to basement. New lights, washers, radios, electric ranges, hobby rooms, air conditioning, a galaxy of needs. In fact, research indicates that each ten families could be sold 15 electric appliances; some of them never having owned, others desiring to replace. The replacement factor in the youngest of our appliance industries, electric refrigeration, has reached 20 per cent as proved by national research.

Selling is the educational adjustment of a need to an answer. The homemaker has many pet peeves; the replacement of worn-out stuff, the yearning for new merchandise; the wish to attain more leisure and to alleviate the burden of housework. Not enough electrical outlets, uneven distribution of heat, improper air conditioning, insufficient hobby room, poor hot water service, improper arrangement for good homemaking management, too small a refrigerator, inefficient kitchen arrangement and equipment, lack of small electrical appliances, glaring lights, dark halls and stairways, failure to utilize basement and attic space in terms of living comforts; there are a thousand annoyances, or wishes, or wants, or obsolescent factors that hinder the enjoyment of the complete home. And this issue of *Electrical Merchandising* assists in educating the public to an appreciation of their value—value far beyond their cost.

Oh yes, we've had a recession. People are charmed by bad luck, but national income in 1937 was at least $13,000,000,000 above that of three years ago—enough to permit 7,000,000 families to enjoy the addition of many of these major electrical conveniences; whether from a modernization or new construction standpoint. Sure, we must sell better. That is the reason why *Electrical Merchandising* has endeavored to provide this selling tool.

This BOOK

E. Stedman

Make this April issue your self-starter in selling. Prospects won't fall into your lap. But, using the knowledge it contains, you won't have to crank and you won't run the danger of breaking your selling arm. It will prevent sales drifting if properly used.

This issue will prevent you from *short-changing* your selling time. It will make you register a better sales impression. We can mobilize, organize, vitalize and information—you have a responsibility to yourselves in its proper utilization. How should this authoritative issue be used?

FIRST, spend an evening browsing through this book, cataloging the divisions which frame your selling activities, and then custom-build its data to fit your selling story. Tabs can be used for ready prospect reference. Organize it for year-round use in front of the prospect, whether at home or on the sales floor.

SECOND, lay out a homeopathic schedule of self-training with this as your text, taking the most important educational factors, tailored to your selling activities first. Don't think of it as a monthly issue of *Electrical Merchandising*, but as a reference book, good throughout the year, and one worthy of prospect exposure at any opportunity, because homemakers are impelled by its unselfishness. Don't try to digest its information in a night or two. Consider its facts as a correspondence course into which you regularly delve on a patterned schedule, until you have digested its entire contents. The brain can only absorb so much at a time. Study it a little each day and put the information into practice.

THIRD, carry it with you wherever you go as your most useful selling tool, because it has convincing power in your sales contacts. Think of it as your "electric eye" to open up further display of individual manufacturer literature as to product features or vital differences that you may desire to make. It displays the general need for the particular electrical convenience being sold, and that is the first point to gain agreement upon in any sales presentation.

FOURTH, have faith that people are genuinely interested in learning and particularly, in the greatest of all things, homelife. Since this text has no particular axe to grind, they will have confidence in it, so the more you expose it to them, the more they will be interested in your further statements. It is a force that will more frequently turn a call into a prospect, than anything else you can use. Remember that people are curious to learn, and skeptical if you start on the first approach to selfishly sell.

FIFTH, go to the city directory and isolate every family name in your selling area, and then pare these off against the telephone directory so that by telephone canvass you can phone to each and say, "I have just received the most authoritative of general references on home modernization and new building ideas, and I will be glad to loan it to you without obligation, and merely for your information." Vary the talk as you choose, but demonstration proves, because of the public interest, that it will uncover a great number of leads that can be organized for response with the least waste of time, effort or gasoline expense. Color your phone approaches with its unselfish and educational values to them, no matter what their present or eventual interest. It might be well to have at least ten numbers of this issue per salesman so that they can be loaned out to a series of prospects, properly identified, and for which the salesman can call back. In other words, turn this issue of *Electrical Merchandising* into a constant subsidiary salesman upon prospects, a silent partner that provides the chance for a powerful selling call-back.

Until now, I have been writing from the angle of the appliance salesman, who after all, is the works. But appliance merchants can also use this issue in ways too numerous to completely cover; as a source of rewritten news stories for local newspapers, as a source book for direct mail, an inspiration for more powerful window display, a copy reference for advertising, a medium for an organized schedule of sales training meetings. Nowhere and at no time has anything so helpful to appliance merchant or salesman been achieved.

This issue permits you to write your own sales ticket, if you have a consciousness of your high sales calling. Brains as well as brawn win in this business. There is a lot of mental bootlegging going on by some who want to get a free sales ride—those who expect to gain something for nothing. But no appliance salesman can expect to get anywhere who wants someone else to build up prospects for him to close easily without mental and educational effort on his part. We must each have the almighty urge to improve our selling stories. This issue of *Electrical Merchandising* is dedicated to make it as easy, as convenient, as wasteless in study time, and as definitely persuasive as possible, for both salesman and merchant.

We've done our job, boys, it is up to you. Action! Sound! Camera! Plenty of signatures on the .....! Kudos to Les Moffatt, our editor. It wouldn't hurt to write him personally, expressing your thanks.

"I'VE GOT JUST WHAT YOU NEED to make sales"

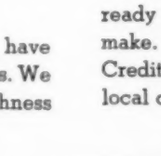
THE buying public's confidence in Commercial Credit Company and familiarity with our time-payment financing plan can be a good-will credit on your ledger . . . a big help at the point of sale.

Many of your prospective customers have had other purchases financed through us. We exercised diplomacy as well as thoroughness in investigating their credit. Our collection system has been courteous and considerate as well as efficient.

When you offer them Commercial Credit Company financing, you find ready acceptance of terms.

Commercial Credit Company supervision of credits and collections is an asset on the merchandising side, too. It helps to eliminate bad credits . . . allows you to concentrate on sound sales to your great advantage. Prompt remittance of your money increases your rate of capital turn-over.

Call on me. I am one of 205 local managers, ready to finance all the sound sales you can make. The great resources of Commercial Credit Company . . . unaffected by changing local conditions . . . are behind me.



REFRIGERATORS • RADIOS
RANGES • HEATING AND AIR
CONDITIONING EQUIPMENT

COMMERCIAL CREDIT COMPANY

COMMERCIAL BANKERS

HEADQUARTERS BALTIMORE CONSOLIDATED CAPITAL AND SURPLUS OVER $64,000,000

Serving Manufacturers, Distributors and Dealers Thru More Than 205 Offices in the U. S. and Canada

PUBLIC RESPONSE HAS MADE THEM THE SMASH HITS OF THE YEAR!

Look Into it Now —And Learn Where The Money Is, For You, This Year!

YOU'RE HEARING PLENTY about Kelvinator, this year . . . and you'll hear more! It's a line with irresistible appeal for the public that wants *modernized homes, better living, at lower cost!*—the greatest line of electrical home appliances the industry has ever seen!

These great products are RIGHT . . . prices are RIGHT! You'll agree that's an ideal sales-making combination. And it's solidly rounded out by sensational, practical new plans that DIG UP MORE PROSPECTS FOR YOU . . . and CLOSE MORE SALES!

Find out fast about the hottest sales-and-profit opportunity the industry has this year . . . from your Kelvinator distributor—or: KELVINATOR, Division of Nash-Kelvinator Corporation, Detroit, Michigan.

THE CHAMPION ICE-MAKER!

With sensational new sealed, silent "Polar Power" Unit*** so economical it produces 72 big ice cubes for 1¢ (at national average electric rates)*** new idea in shelf adjustability*** new Speedy-Cube ice release*** and a score more Kelvinator features that have stolen the spotlight!

CHAMPION AMONG WASHERS!

These 1938 Kelvinator Washers are upsetting all past records for salability. Quiet, simple, with a minimum of moving parts . . . amazing speed and washing efficiency . . . featured by the great Flex Agitator that's so thorough but easy on clothes . . . the famed Pressure-ator Wringer . . . and plenty more!

AND STILL ANOTHER CHAMPION!

Electric Cookery goes to town with 1938 Kelvinator ranges! They're faster and more economical, with features—in even popular-priced models—never before equalled! Huge, speed-heating ovens . . . giant broilers . . . two types of high-speed cooking units . . . marvelous controls. Find out about the NEW, SURE-FIRE SALES-MAKING AID—the "KONVINCE-HER".

1938 Kelvinator

MODERN ELECTRICAL HOME APPLIANCES

"List your business under the brands you sell

EASY WASHER AUTHORIZED SALES AND SERVICE

All DEALERS listed below are authorized to sell and service Easy Washers and Ironers. You are sure of genuine Easy Parts from these authorized DEALERS

EASY

"WHERE TO BUY IT"

MONARCH REFRIGERATORS

"Assured Twin Efficiency — Speed with Economy" — in the operation of MONARCH Kitchen Equipment: Coal-Wood, Gas, Electric Ranges; Electric Refrigerators and Water Heaters.

Monarch

"WHERE TO BUY THEM"

NORGE ROLLATOR REFRIGERATION

Norge Rollator Refrigeration gives you more electric cold, more economy, more storage space. Norge Concentratur Ranges. Automatic Washers. Duotrol Ironers make modern homes completely modern.

NORGE

"WHERE TO BUY IT"

KELVINATOR WASHING MACHINES AND IRONERS

KELVINATOR WASHING MACHINES AND IRONERS CUT HOME LAUNDRY COSTS

Kelvinator

"WHERE TO BUY THEM"

THOR WASHERS-IRONERS

—for thirty-one years Thor has been the outstanding home laundry equipment. The following Thor dealers are authorized for sales and service.

Thor

"WHERE TO BUY THEM"

GENERAL ELECTRIC REFRIGERATORS

The refrigerator with the famous vacuum sealed mechanism for homes and apartments; G-E Commercial Refrigeration; Water Coolers, Ranges, Dishwashers, Disposalls; the complete G-E Kitchen.

GE

"WHERE TO BUY IT"

KELVINATOR ELECTRIC REFRIGERATORS

"THE CHAMPION ICE-MAKER"

Kelvinator

"WHERE TO BUY THEM"

WESTINGHOUSE HOME-PROVED LAUNDRY EQUIPMENT

Women conducting nation-wide home-proving tests report clothes are cleaner, look better, launder easier, last longer when washed and ironed the Westinghouse Way.

"WHERE TO BUY IT"

LEONARD ELECTRIC REFRIGERATORS

THE BIGGEST BARGAIN IN REFRIGERATORS TODAY

LEONARD ELECTRIC

"WHERE TO BUY IT"

FRIGIDAIRE AUTHORIZED SALES & SERVICE

Save more on current, food, ice, upkeep! Only Frigidaire has the New Silent Meter-Miser, new "Double-Easy" Quickube Tray, and many other exclusive advantages.

FRIGIDAIRE

"WHERE TO BUY IT"

WESTINGHOUSE KITCHEN-PROVED REFRIGERATORS

Have food, time, money with these NEW Kitchen-proved features: covered, all-porcelain Meat-Keeper; big glass-top Humidrawer; Zoned Temperature Regulator.

"WHERE TO BUY IT"

ABC AUTHORIZED SALES AND SERVICE

AMERICA'S LEADING WASHERS AND IRONERS

Precision Built

ABC

"WHERE TO BUY IT"

"and get your share of telephone book customers"

These well known trade marks appear in Classified Telephone Directories. Under them are listed many authorized dealers and distributors.

If *you* qualify, are *you* so listed?

This is an opportunity to identify yourself with the brands you sell. It is a tested plan to increase sales. As one of thousands of dealers writes, in a typical letter—

"We have traced several service calls and sales to the advertising under various classifications which we carry in the telephone directory."

For information call the directory man at your telephone business office.

—let there be *adequate* light!

- Today, light is "measured" as easily and accurately as we measure cloth by the yard, milk by the quart, butter by the pound. The unit of light measurement is the "foot candle"; anyone with a foot candle meter can accurately gauge the light intensity anywhere in the home. By means of this clever "yardstick" lighting technicians have been able to establish the standards of illumination for different rooms in the home, different types of fixtures, different types of electric lamps. Among other things, they've proved that the average *home is grossly underlighted!*

- Home lighting can be improved without extensive or expensive alterations.

- Your local power company will call—measure your lighting intensities—prescribe proper remedies.

ELECTRICAL MERCHANDISING
330 West 42nd Street
New York City

AND NOW—

LARGER PROFITS

THE NEW 1938

MONARCH DELUXE

ELECTRIC DRY SHAVER

LIST PRICE **$5.**

WRITE FOR LIBERAL DISCOUNTS

Thousands of dollars and months of research have produced the new Monarch DeLuxe head that gives a faster, smoother, non-irritating shave—and cuts right down to the skin surface.

Here is real luxury at a price—the result of expert engineering, quality, materials, and precision workmanship. The powerful motor is encased in bakelite. Operates on 110-120 volt A.C. or D.C. current. Comes packed in a beautiful genuine leather pouch.

- HANDSOME "PERFECT GRIP" CASE
- DOUBLE SHAVING EDGES • SELF-SHARPENING • A PERFECT MOTOR
- FULLY TESTED AND APPROVED BY UNDERWRITERS' LABORATORIES

MONARCH MFG. CO.

711 West Lake Street, Chicago

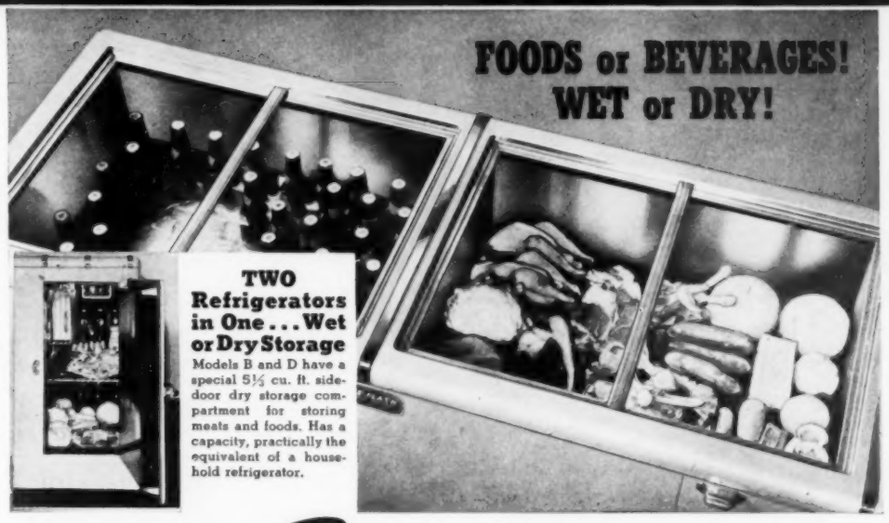
There's Economy as well as Luxury in

MODERNIZING ELECTRICALLY

• • • • •

THERE'S NOTHING LIKE IT IN THE ENTIRE INDUSTRY

because it bridges the gap between household and commercial refrigeration



TWO Refrigerators in One . . . Wet or Dry Storage

Models B and D have a special 5½ cu. ft. side-door dry storage compartment for storing meats and foods. Has a capacity, practically the equivalent of a household refrigerator.

ONLY THE Brunswick BLUE FLASH

functions equally well for **FOODS or BEVERAGES**

This picture illustrates the wide range of this famous line of Table-Top Refrigerators. All foods—fresh or prepared—meats, vegetables, fruits, sea foods, dairy products and produce can be kept fresh and flavorful at any predetermined temperature WITH PRACTICALLY NO DEHYDRATION! All beverages as well—canned or bottled—can be kept icy cold in WET or DRY storage—either standing or corded!

Refrigerates Faster—Costs Less!

Another reason for the tremendous popularity and salability of the Brunswick BLUE FLASH is that it cools faster, operates more economically, and costs less per cubic foot than any other refrigerator.

Saves Shelf Space!

The exclusive Brunswick 5-sided refrigeration principle makes BLUE FLASH Table-Top construction possible. Because of it, the cold stays in, even when the lid is open. Because of it, merchants *save shelf space*—they use it as a Table, or as a Counter, or as an Island Display! Sells as it refrigerates. Owners like its "Slide the top and reach in" feature.

Dealers! Distributors!
Opens a Brand New Market for You!

Nearly every merchant on Main Street is a real prospect. A tremendous source of extra sales. For full particulars, mail the coupon now!

Here's the Complete Line of *BRUNSWICK BLUE FLASH* Table-Top Electric Refrigerators

MODEL B—For smaller space, this table-top model meets every need. Its single top compartment can be used WET or DRY. In addition it has a side-door dry storage compartment. The top and side door compartments have a combined capacity of approximately 9 cu. ft.

MODEL D—An extra-capacity table-top refrigerator with two storage compartments on top for WET or DRY storage, plus the additional advantage of a side-door storage compartment. The two top compartments and the side door compartment have a combined capacity of approximately 13 cu. ft.

MODEL F—For the larger merchant's requirements. Three storage compartments on top for WET or DRY storage. A model with a capacity of approximately 14 cu. ft. in the three top compartments. (This model has no separate side door compartment.)

Appliance Division, THE BRUNSWICK-BALKE-COLLENDER CO.
632 So. Wabash Ave., Chicago, Ill.

DEALERS! DISTRIBUTORS!

Send this Coupon for Complete Details on the money making Brunswick Blue Flash Franchise!

Appliance Division, The Brunswick-Balke-Collender Co.,
632 South Wabash Ave., Chicago, Ill.

Tell us more about the Brunswick BLUE FLASH Table-Top Electric Refrigerator EXCLUSIVE FRANCHISE. Send us full particulars.

Name_____

Firm_____

Address_____

"Sure, I'm a TOUGH GUY ... sometimes!"

THIS is probably a typical portrait of the many prospects your salesmen classify as "tough guys" . . . men hard to approach; still harder to sell . . . and, in times like these, harder to sell than ever.

But your men never see these prospects when they put aside their masks of sales resistance; when they are absorbed in reading ELECTRICAL MERCHANDISING. Then they're "regular" enough and they're in a forward thinking frame of mind, receptive to your printed sales messages.

Investigation by ELECTRICAL MERCHANDISING shows that a large per cent of its 30,100 regular monthly readers take their copies home with them . . . read it from cover to cover . . . further, that every copy averages 4.5 readers.

ELECTRICAL MERCHANDISING talks your prospects' language. Your prospects look to it for sound interpretation of important events in *their business* and they're willing to pay cold cash year after year for its suggestions that help *their* livelihood.

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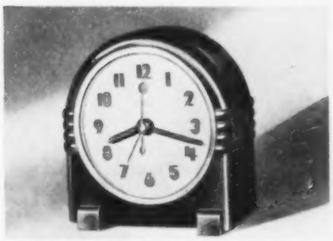

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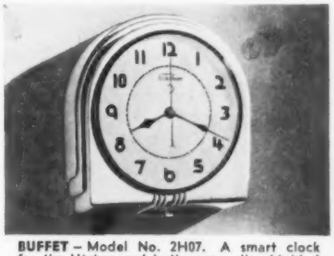

BUFFET – Model No. 2H07. A smart clock for the kitchen and bathroom walls. Molded plastic case, choice of ivory, green, white, black or red colors. Retails at only **$3.50**

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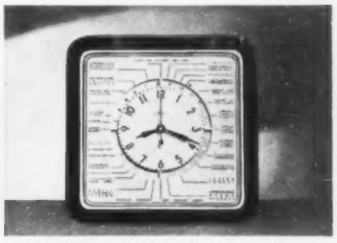

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THE KITCHEN

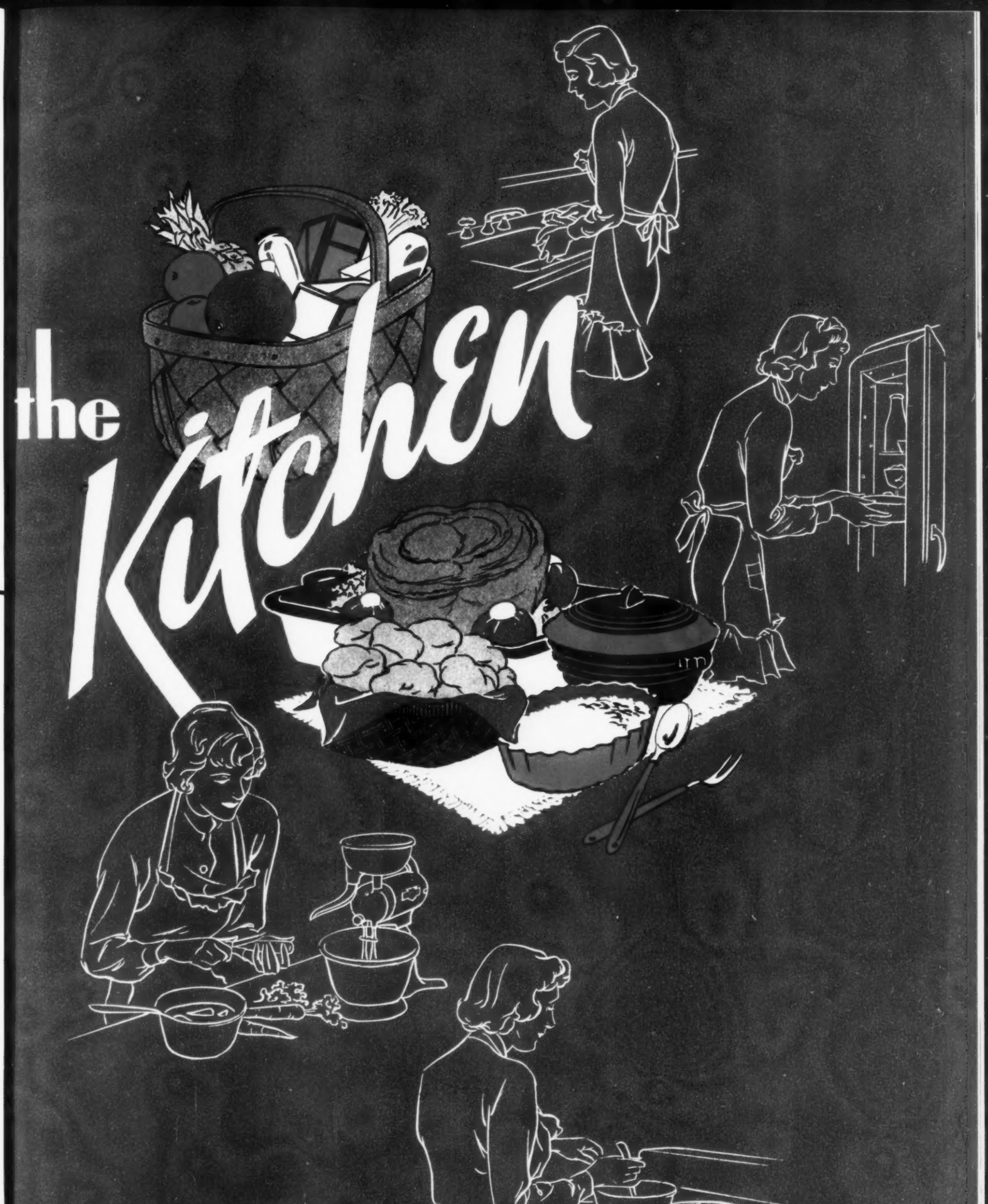
● "Come and See the Kitchen" is the proud invitation of Mrs. Homeowner when she can show her guests a room where work is easy and pleasant because it is modernized—electrically.

● Handsome, too, with its gleaming white equipment that promises continued freedom from grease and dirt. There can be but few home owners who do not place a modern electrical kitchen high on the list of the things they want for their homes—if they had the money. That's the barrier to many wanted home improvements and family luxuries.

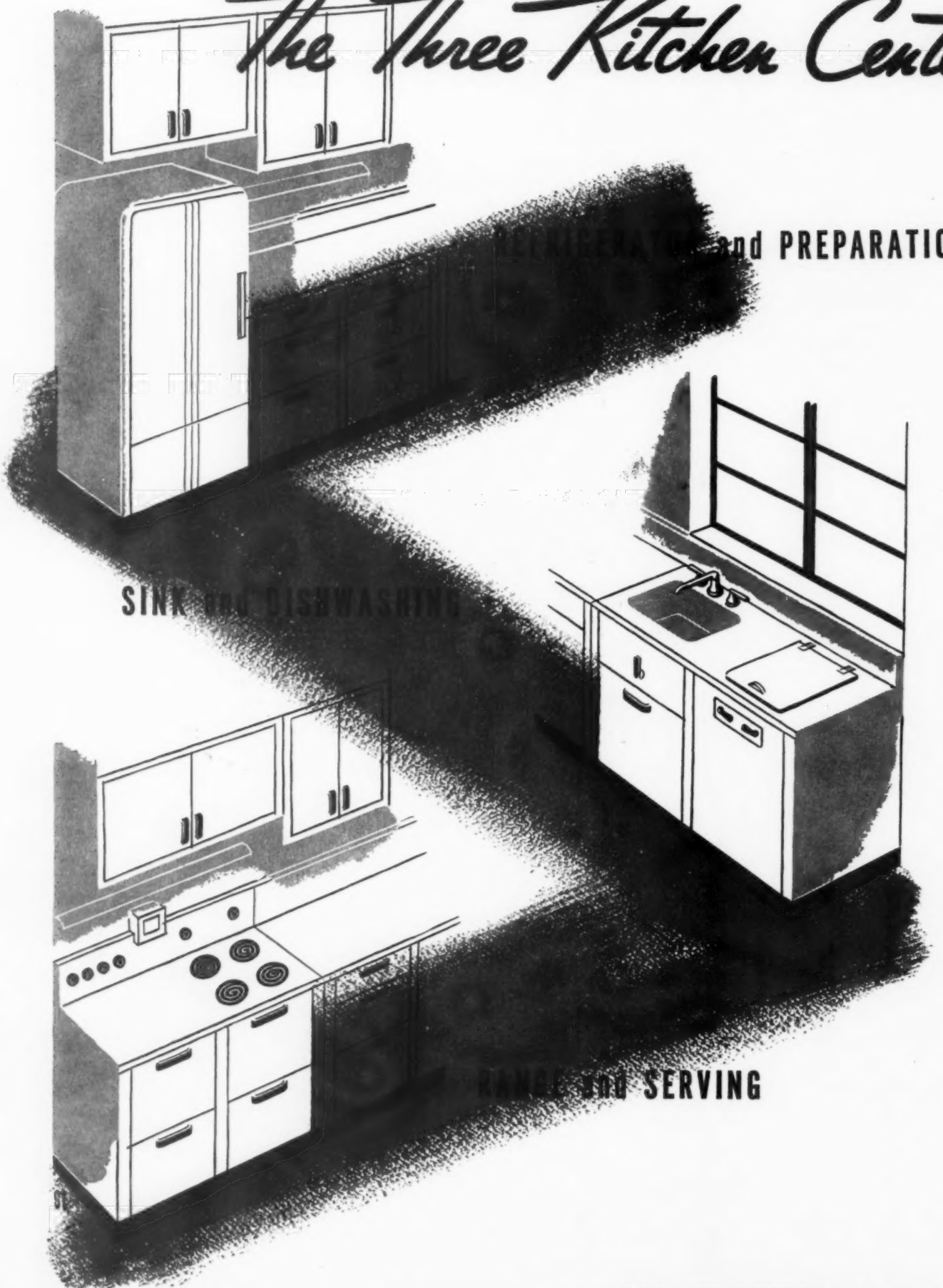
● But the electric kitchen is one luxury that can be made to pay for itself. That is the important message that the electrical industry has for the home owner: Savings and economies made easy by electrical kitchen equipment will pay for a complete modernization in a surprisingly short period of time.

● Just what these savings amount to is shown by the tests and research of Mrs. Ralph Borsodi, noted writer and lecturer on home economics. From the records kept over a period of years Mrs. Borsodi can show cash savings or earnings from the use of electrical kitchen equipment of $250 a year and more. These savings involve quantity buying and storage in the electrical refrigerator and the home preparation of foods instead of the purchase of prepared foods; home prepartion being easy and pleasant with the electric mixer and electric range.

● These then are the facts to be kept in mind when the cost of electrical kitchen modernization is in question: Electrical kitchen equipment is not expensive when its perfection of construction and long life are considered. Further, it will pay itself in a few years. And for all its many years of life continue to pay dividends of health, comfort and happiness in the home.


the Kitchen

The Three Kitchen Centers . . .



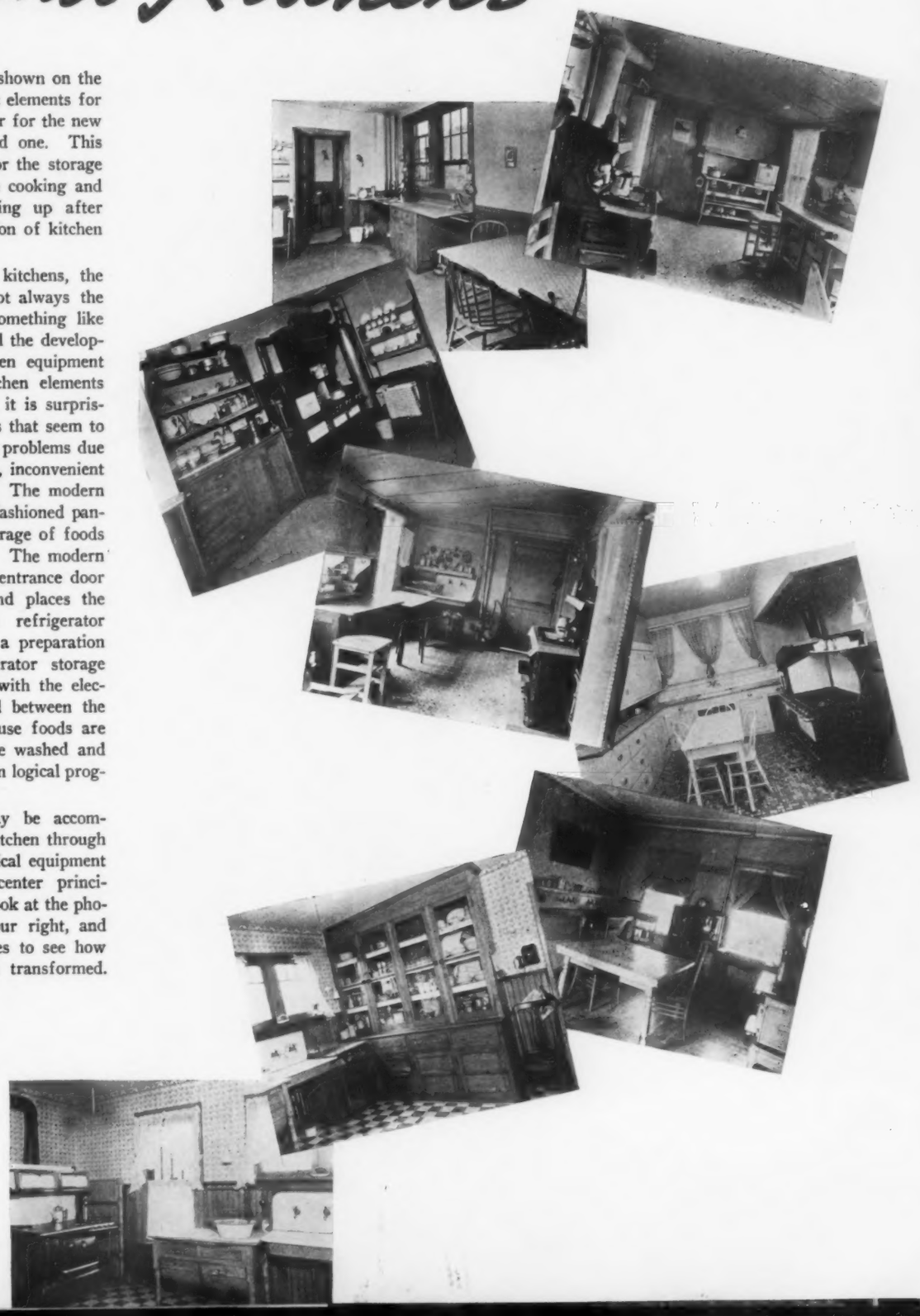
...and MODERNIZING

Old Kitchens

THE three kitchen centers shown on the opposite page are the basic elements for planning any kitchen, either for the new house or for modernizing an old one. This conception of the three centers for the storage and preparation of food, for the cooking and serving of food and for cleaning up after meals is the common sense division of kitchen work into its several elements.

As long as there have been kitchens, the woman who used the kitchen, not always the man who planned it, has had something like this in mind. Not, however, until the development of modern electrical kitchen equipment was it easy to bring these kitchen elements into their proper relation. And it is surprisingly easy even with old kitchens that seem to present such difficult and baffling problems due to a multitude of door openings, inconvenient entrances and unhandy pantries. The modern kitchen does away with the old-fashioned pantry or store-room and brings storage of foods in and around the refrigerator. The modern kitchen starts preferably at the entrance door where foods are brought in and places the refrigerator there. Next the refrigerator there should be a cabinet with a preparation counter and above the refrigerator storage cabinets. Next comes the sink with the electric dishwasher. This is placed between the refrigerator and the range because foods are taken from the refrigerator to be washed and peeled at the sink and then pass in logical progress toward the kitchen range.

The transformation that may be accomplished in modernizing an old kitchen through the application of modern electrical equipment installed in accordance with center principles is very dramatic indeed. Look at the photographs of old kitchens to your right, and then turn to the following pages to see how these same kitchens have been transformed.



The L

MODERNIZING old kitchens frequently means contending with a room into which there are a number of door openings leading into pantries, basement, porches and interior rooms of the house. With this type room, often a large one, the L shaped arrangement of the three kitchen centers is frequently the best solution. In its ideal form the L shaped kitchen, as is shown on the sketch below to the right, begins with the refrigerator near the entrance from the outside and passes with an unbroken counter surface to the range located near the dining room door. Two remodeled kitchens of the L type are shown on these pages.

The kitchen on the top half of the page, originally, as the photograph on the right shows, had set laundry tubs as well as a sink. Clothes washing had obviously been a part of the activities in this kitchen. Necessary food storage was provided for in a pantry.

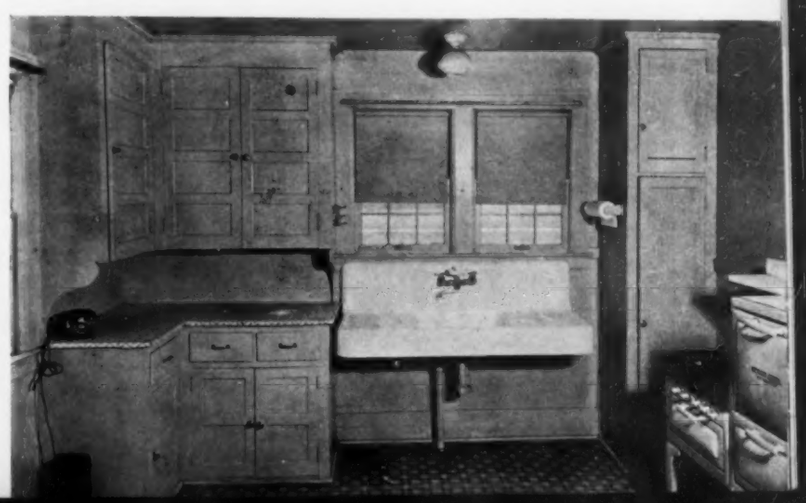
In one of these old-fashioned kitchens, used also by the family for the washing and ironing, there usually is a good sized pantry or storage room. An excellent and thoroughly modern solution of the laundry problem and the use of excess space is to turn the pantry into a small but completely equipped laundry and linen room. Sketch illustrating this idea is shown on the opposite page. With the modernized kitchen and its cabinets providing adequate storage room the pantry is no longer needed and space, therefore, immediately becomes available for a modern, compact laundry on the first floor.

The above kitchen at Provincetown, Mass., was modernized into the kitchen shown on the opposite page at the following cost, exclusive of the new electric range and refrigerator: Sink and cabinets, $460; Linoleum floor, $60; Tile work and papering, $40; Carpentry work, $50; Plumbing, $55; Painting, $30; Electricity, $25.

L Shaped Kitchen

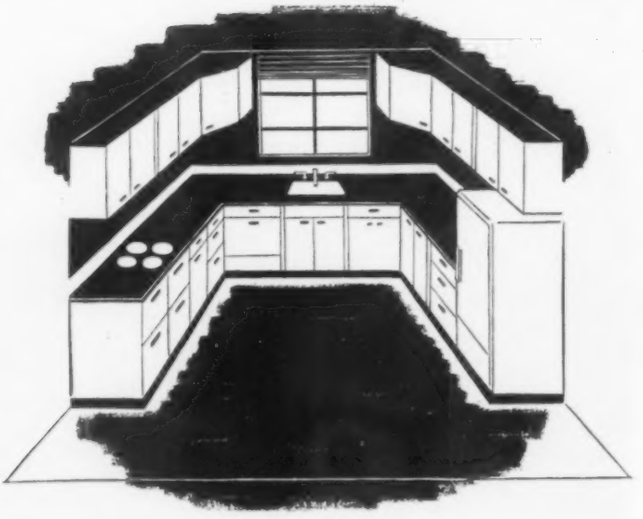
THE kitchen modernization shown on the lower half of page 24 discloses a more compact kitchen than the one above. It is almost an ideal example of the L shape arrangement. The counter adjoining the range with the cabinets above forms the cooking and serving center; the counter to the right of the refrigerator with the cabinets above form the refrigeration and preparation center; these two centers joined by the sink and dishwashing center, provide a streamlined home workshop. Note that the refrigerator door opens to the left making completely handy the access to the refrigerator by a person working at the preparation counter.

The gleaming Monel counter surfaces and the dead white of the cabinets, refrigerator and range are contrasted with the colored linoleum floor. A minimum of structural change was made in this kitchen as will be seen by comparing the old kitchen to the right and the new kitchen on the page opposite. The sink was underneath the window in the old kitchen and so the plumbing did not have to be moved. An ample number of convenience outlets makes provision for the use of the mixer, coffee maker, toaster and other indispensable adjuncts of the modern kitchen.



THE U SHAPED KITCHEN

THE U kitchen, like the L kitchen, provides a continuous working surface from the preparation and refrigeration center straight along a stream line path to the range and serving center. The U kitchen is the logical and natural arrangement where there is a window in one end of the room and entrance



and exit doors are localized toward or at the other end. The kitchens shown in before and after photographs on these pages approach the kitchen ideal, providing a compact and efficient working space, and also provide for eating in the kitchen.

PLANNING a kitchen, either for the house which is being modernized where spaces are pretty much fixed or for a new house where there is greater chance for predetermining the size and functions of the kitchen, takes into consideration the fact that some eating space is a desirable part of the good kitchen plan.

Investigation into living habits of families in every part of the country has shown that the vast majority of American families do some of their breakfasting, lunching and dining in the kitchen. In addition to the family's regular meals, there are always the casual night raids on the larder and the occasional meals where it is so much more easy and convenient to use the kitchen for a dining room as well. Where there are children the dining space in the kitchen becomes even more important. If the kitchen is a pleasant place, and the modern electric kitchen is certainly a pleasant place, then the dining room is, with many families, reserved for formal entertaining and the family takes many of its meals in the kitchen.

IN re-modeling a kitchen where there is plenty of space this is quite simple to provide for. Where the space is more limited, however, the U shaped kitchen often provides an ideal solution. The kitchen shown on this page is a most remarkable example of kitchen re-modeling. This old kitchen (shown above) at New Milford, Conn., was remodeled by the owner at a very moderate cost into a most modern kitchen (shown below) following the plans prepared by the Connecticut Light and Power Company. The family owned a refrigerator but the rest of the equipment was purchased new. The total cost of this modernization was only $629, itemized as follows:

Range	$179.00
Cabinets, built on job by owner	235.00
Sink—including plumbing	115.00
Linoleum, new windows, wiring for outlets and fixtures and interior decorating	100.00
	$629.00

Modernization of the kitchen above did not appear an easy task when this photograph was taken in March, 1937. But in a short time the same space enclosed the kitchen shown in two photographs below. This is an old homestead at New Milford, Connecticut. Great as the transformation is, the cost was very moderate, amounting to only $629.00.

The above kitchen shows an ideal conversion from the kitchen shown below.

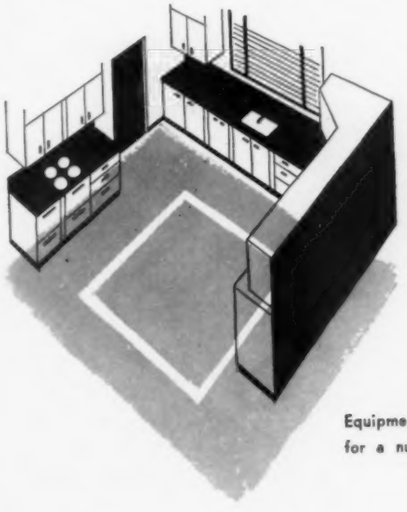
The "Broken U" Kitchen

The broken U is a kitchen pattern which is called for by a number of kitchens fairly square in shape with several door openings. Note in the plan, one door leading into the dining room. There may be (on the wall not shown on the plan) two or more openings. A kitchen of this type fits the requirement where a door from the outside, a door down into the basement and a door into the dining room must all be provided for.

MODERNIZING COST OF KITCHEN ON THIS PAGE.

Sink and cabinets	$720.00
New Range	307.00
Dishwasher	199.00
Carpentry, including tile	300.00
Plumbing	50.00
Electricity	75.00
Linoleum floor	78.00
Painting	100.00

A change in the plumbing brought the sink (shown below) under the window (shown above) for good light and pleasant work.



Equipment on three walls provides for a number of door openings.

On this page is shown a remodeled farm kitchen. A dramatic example of change from typical 1850 to advanced 1938.

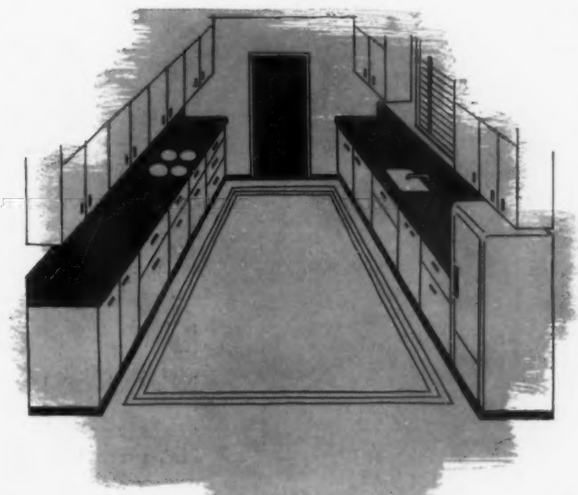
THE TWO WALL KITCHEN

In the modernization it will be noted that the range and dishwasher have been placed on the same side of the room. The refrigerator is directly opposite the range with the preparation center surfaces facing electric range and dishwasher.

THE two-wall kitchen solves the problem of the straight sided kitchen with usually one entrance door from the outside and a door into the dining room. Such a kitchen often presents a problem when it comes to providing a needed space for a breakfast nook or other provision for the casual meals that the family prefers to take in the kitchen.

On this page is shown a particularly good example of the two walled kitchen with the adjoining breakfast nook. Here the breakfast space is separated by a half partition from the kitchen with the table adjoining the electric dishwasher sink. The range (not shown in illustration) is on the wall directly opposite the electric sink.

Modernizing cost of this kitchen $1,025.00. The family already owned an electric range and a refrigerator. Added were a dishwasher sink and disposal unit, $525; the cabinets and installation, $275; linoleum, $45; radiator, $20; interior decorating, $50; and installation of electrical equipment and additional adequate wiring came to $110.



the Family

A Portland family decided to do something about the old kitchen shown in the photographs on this page. They developed an ideal plan and carried it out as shown by the photographs of their completely modernized kitchen on the opposite page.

IN Portland, Oregon, more than 900 families have modernized or built complete modern electric kitchens in new homes since the founding of the Kitchen Planning Service of the Portland General Electric Company back in 1935. This is approximately two-thirds of the 1,400 plans made by this Service.

Portland people may obtain from the Kitchen Planning Service not only complete working layout but the Service furnishes a perspective drawing in color of two sides of the kitchen as well. This activity has so stimulated the interest in kitchens that many Portland families have planned their own kitchen for the fun they get out of it and have asked the advice of the Portland General Electric Company or of Portland electrical merchants on the details only.

On these pages is shown one of these kitchens planned and carried out by Mr. and Mrs. Homeowner themselves. And following is the way in which this family describe their own new kitchen as they planned it:

"This kitchen was planned with the desire to make the job of cooking and serving meals as simple and easy as possible. In our case it was necessary to accomplish this with a small expenditure of money. The largest expenditure in this job was for the refrigerator, dishwasher, and electric range.

"We have tried to use line production methods in handling of food and dishes. The supplies brought in the back door can be easily placed in the refrigerator which is located beside the door. Across the doorway from the refrigerator is the end of the drainboard. Set in between the drainboard and the cabinet is a cutting board which is dropped down exposing sharp knives ready for use (as shown in photograph).

"Next to the cutting board is the spice cabinet within easy reach of the working surface. A mixer garage is located in the corner with a convenient outlet near the door. Next in line is a cooler which adjoins a paper towel rack. Next comes the dishwasher and then a sink which is a standard 20 by 24 but is turned the narrow way so as to match up with the dishwasher. This feature made an excellent arrangement with a saving of $150.00 in equipment cost as compared with a combined dishwasher and sink.

"Adjoining this is more drainboard. Then comes the electric range. From the range the food can be taken about four feet to the dining room door. When the meal is over dishes are returned to the drainboard beside the range and the sink to be rinsed; then to the dishwasher—back to the cabinets above the corner drainboard.

"Black marble linoleum covers all drainboard surfaces, extends eleven inches up the wall from

I planned this Kitchen

By CLOTILDE GRUNSKY

the drainboard to the window sill and over to the mixer garage. All of the floor surface is covered with black marble linoleum inlaid with a red stripe. A 3-inch cove has been put around the edge even under the drainboard which has been indented 3 inches deep and 4 inches high to allow toe room.

"All cabinet work is of ¾ inch 5-ply plywood which has been painted just off-white on the exterior with a bright red on the interior. We have used flat grain plywood which to date has not resulted in any serious warping. All cabinets are 18 inches but do not extend more than 12 inches over the drainboard as the whole thing is set out 6 inches from the wall. In addition this gives a nice ledge by the double window and allowed room to build in towel rack, cooler, mixer garage, spice cabinet, and cutting board. The cabinets extend to the ceiling which is papered with off-white plain wallpaper.

THE other walls of the kitchen are papered with red and white figures on a gray background outlining pottery kitchen utensils. The hardware used is of a dull chromium. The curtains are made of oiled silk and have black and white stripes which match the drainboard and floor covering.

"All drawers are 24 inches deep, two of them being metal-lined. A bread board is inset under the drainboard near the mixer garage. A convenient feature is the use of detachable metal sugar and flour bins mounted on the backs of two cabinet doors under the drainboard. The angle corner above and below the mixer garage gives an abundance of storage space for pots, pans, and food supplies.

"The electric ventilating fan is located in one of the cabinets over the range and draws the air through a screen in the cabinet door.

"This kitchen is the result of what we thought was an ideal plan, and it is one ideal plan that really works. My wife and I both work. There are meals to get before we leave and after we return home, and this kitchen has simplified this work to a few duties which can be done in a very short time."

Itemized Costs of This Kitchen

Electric Range and Wiring	$315 00
Electric Refrigerator	250 00
Electric Dishwasher	166 00
Electric Fan	15 00
Electric Water Heater	125 00
Linoleum (for floor and work surface)	75 00
Cabinets, Hardware, etc.	125 00
Plumbing	50 00
Paint, wallpaper, etc.	50 00
Total	$1,171 00

THE STANDARD UNIT KITCHEN

This electric kitchen is assembled from standard units. Modernized from the kitchen shown at the left its compact convenience solved the space problem. Part of the modernization was also the pleasant breakfast room shown at the bottom of the page. The radiator under the dead end cabinet in the corner, under the pass window, heats both rooms and acts as a plate warmer.

MRS. WEITZ, in Cleveland, Ohio, intended to put an addition to her house to enlarge her kitchen (shown to the left). Instead, however, she took the advice of a kitchen planning expert. He planned for Mrs. Weitz the kitchen shown above which occupies the same space as the original kitchen and provides plenty of work surface and a complete array of labor-saving equipment in the space which seemed, before this modernization, much too small. Note in the photographs above how dropping the ceiling makes the kitchen appear larger. The cost was about what the cost of the addition would have been—around $1000. The standardized unit counters and cabinets, range, dishwasher and disposall list at approximately $850, (the family owned a refrigerator). Plumbing was $70, the electrical work, carpentry, painting and all the rest of it amounted to approximately $250 more.

The standard unit kitchen is made up of units like the range unit to the left. Range, dishwasher, sink and base cabinets all are standardized with the top storage cabinets, lighting strip and back splash wall panels complete. Each unit is 24 inches wide, permitting great flexibility in arrangement.

KITCHEN LIGHTING

Indirect kitchen fixture using bowl silvered lamp.

Shaded wall brackets for kitchen.

Semi-indirect fixture of glass and metal for kitchen.

THE problem of kitchen lighting resolves itself into one of providing a level of general illumination of from 5 to 10 foot-candles and a local illumination over all work surfaces of from 10 to 20 foot-candles. This means a combination of ceiling fixtures and local work lights.

For the ceiling, a standard white glass enclosing globe is always satisfactory. The glass should be from 10 to 12 inches in diameter and have good diffusion so the bright spot of the lamp bulb is not visible. In small kitchens use 100 watts in a 10″ globe. In larger kitchens, use 150 watts in a 12″ globe. There are many new fixtures that offer an interesting variation from the glass enclosing globe. Fixtures designed to carry the bowl silvered lamps produce a high quality of general illumination over the entire room. Use the 150 or 200 watt sizes. Semi-indirect fixtures of plastic material or of combinations of glass and metal are readily adaptable for kitchen installations. Again the 150 and 200 watt lamps are recommended.

A simple well shaded wall bracket over the range will provide light for cooking.

Modern kitchens require an undershelf type of work light. Most of these units are rectangular in shape being about 20″ long and 4″ deep and use one 60 watt lumiline lamp or 2—40 watt standard lamps. If plug-in strip has been installed on the wall along all work surfaces, 60 watt lumiline lamps equipped with metal reflectors can be plugged in.

A SPACE SAVING KITCHEN

The kitchen to the left is another good example of how electrical equipment solves the problem of limited space. Here is a very small room and yet with the three centers (refrigerator not shown is against the wall facing the range) counter space and storage cabinets, all the kitchen facilities are provided and steps are saved. The grill in a top storage cabinet covers a ventilating fan and is placed, as it should be, above the range.

A "Plug-in" KITCHEN

UP to now, we've been considering plans and designs and equipment for standard, full-size kitchens in the home. But there are lots of small kitchenettes, tiny furnished apartments without regular kitchens, summer camps, cabins and such where a permanent, built-in kitchen layout is out of the question. And yet these other types of places need cooking facilities; in many cases, their value from a renting or ownership standpoint would be considerably enhanced if some practical, space-saving and efficient cooking center were provided.

Well, here's the answer.

Here is a kitchen which, from a cooking standpoint, will do a great many of the things the larger kitchens are designed to do and yet the cost of the equipment is kept to the minimum and it takes up no more room than a good-sized closet will accommodate.

NUCLEUS of this "Plug-in" kitchen is the electric roaster. This unique device will prepare an entire meal for an average family and do it automatically. It is a miniature of the ovens on electric ranges with all their thermostatically controlled capacity to roast, bake, broil, steam and fry meats, vegetables and pastries. The illustrations on these pages show some of the variety of food combinations possible to prepare with the aid of an electric roaster. An entire meal may be cooked at one

There's enough good grub on this page to make any mouth water—and it's all been cooked in the electric roaster—the nucleus of the "plug-in" kitchen.

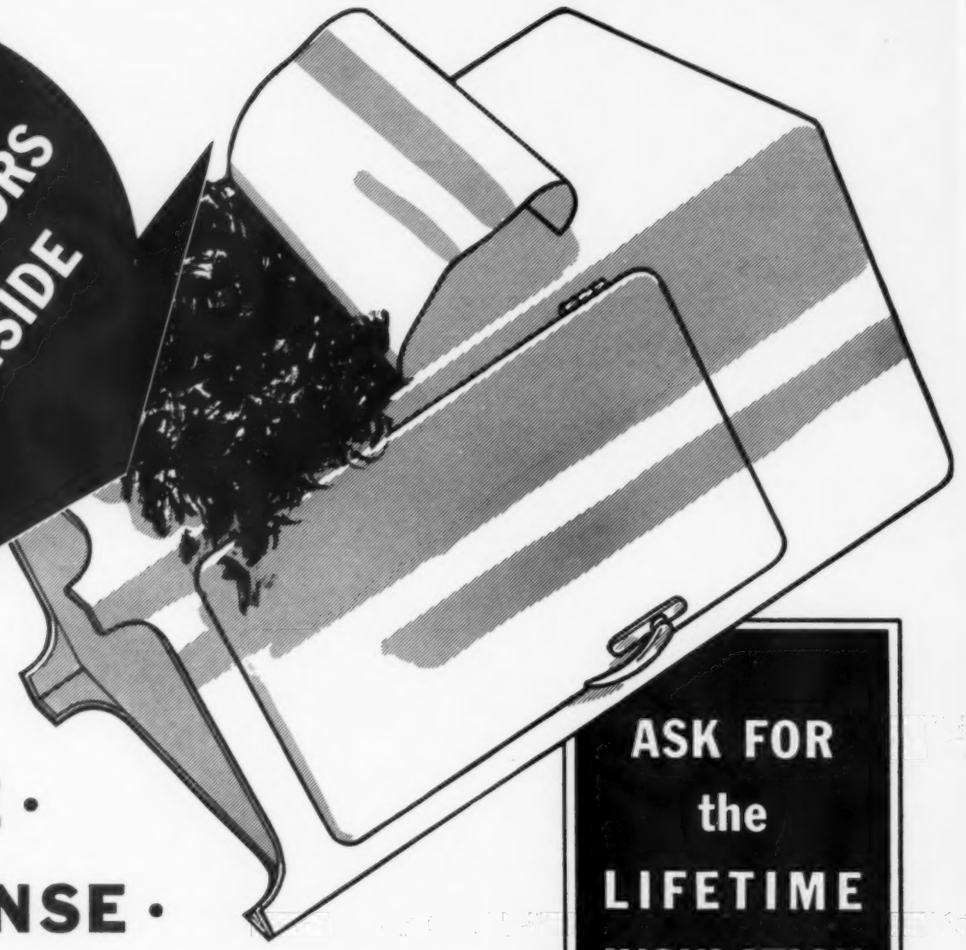
time or the device used for special purposes such as baking bread or preserving fruits.

THE other devices include a glass coffee maker, an automatic electric toaster and a waffle iron. These are all plug-in heating appliances and have become staple equipment in homes with regular kitchens.

All the cooking utensils shown on these pages are of the plug-in variety. No special wiring is required.

The electric roaster, it might be added, is one of the fastest-selling electric appliances in the country. Families with regular sized kitchens are buying them for their convenience in preparing meals; in basement rumpus rooms they provide a secondary snack and buffet cooking center; on picnics they are useful to carry an entire cooked meal, keeping it hot. And many home-makers hitherto unfamiliar with the benefits of electric cookery on a regular range are getting their first experience with a roaster.

TESTS SHOW that SOME REFRIGERATORS DIE INSIDE



NUISANCE · TROUBLE · EXPENSE ·

for owners of refrigerators that don't have proper insulation

ASK FOR the LIFETIME INSULATION

• Insulation is placed in refrigerator walls (entirely hidden from view) to shut out the heat of summer, stove, oven, and radiator. It protects the food and prevents both needless operating expense and serious refrigerating trouble.

But you must steer clear of refrigerator insulations that break down from moisture, rot, and fungus growths; or develop smells, or degenerate into a wet, pulpy mass!

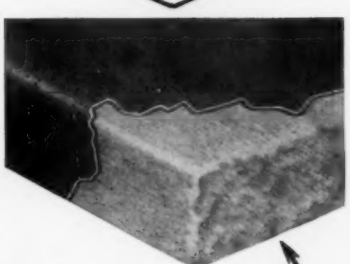
Because, if the insulation wilts, deteriorates, or merely absorbs moisture, then it no longer gives adequate protection to the food compartment. In such case, the refrigerator simply DIES INSIDE ITS WALLS and never more gives the protection needed.

Numberless laboratory tests show that one insulation lasts for life—that is DRY-ZERO. This insulation has been used successfully in millions of household refrigerators, in thousands of refrigerated motor trucks and railroad refrigerator cars. Experienced engineers certify its lifetime efficiency.

Dry-Zero stays resilient, clean, and dry as long as the refrigerator is used. It prevents the refrigerating unit from working overtime. It saves electric current bills. It helps keep the refrigerator cold enough to give 100 per cent protection to food.

Get the Inside Story

Learn all the facts about refrigerator insulation. Send 25¢ for a copy of this book.



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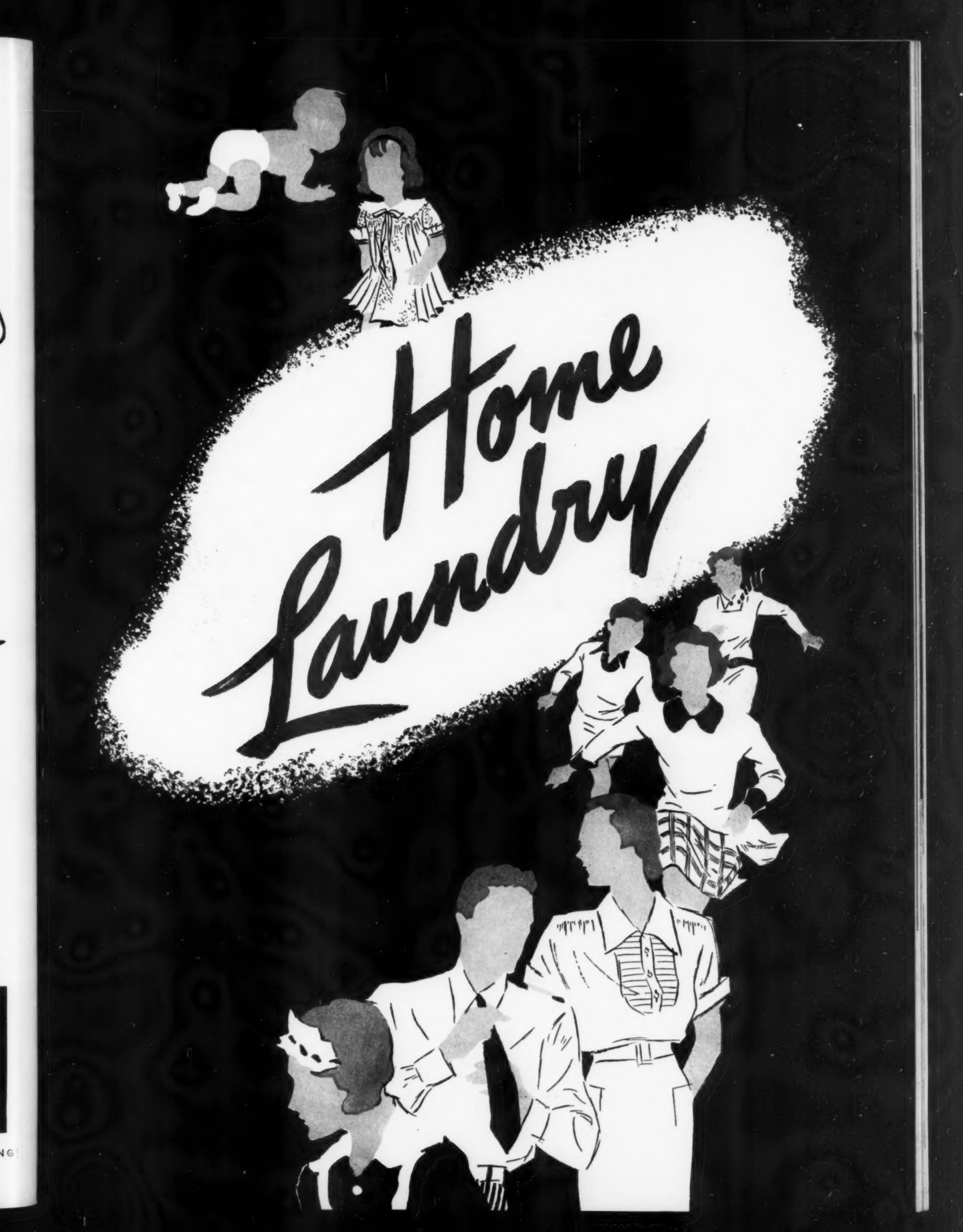
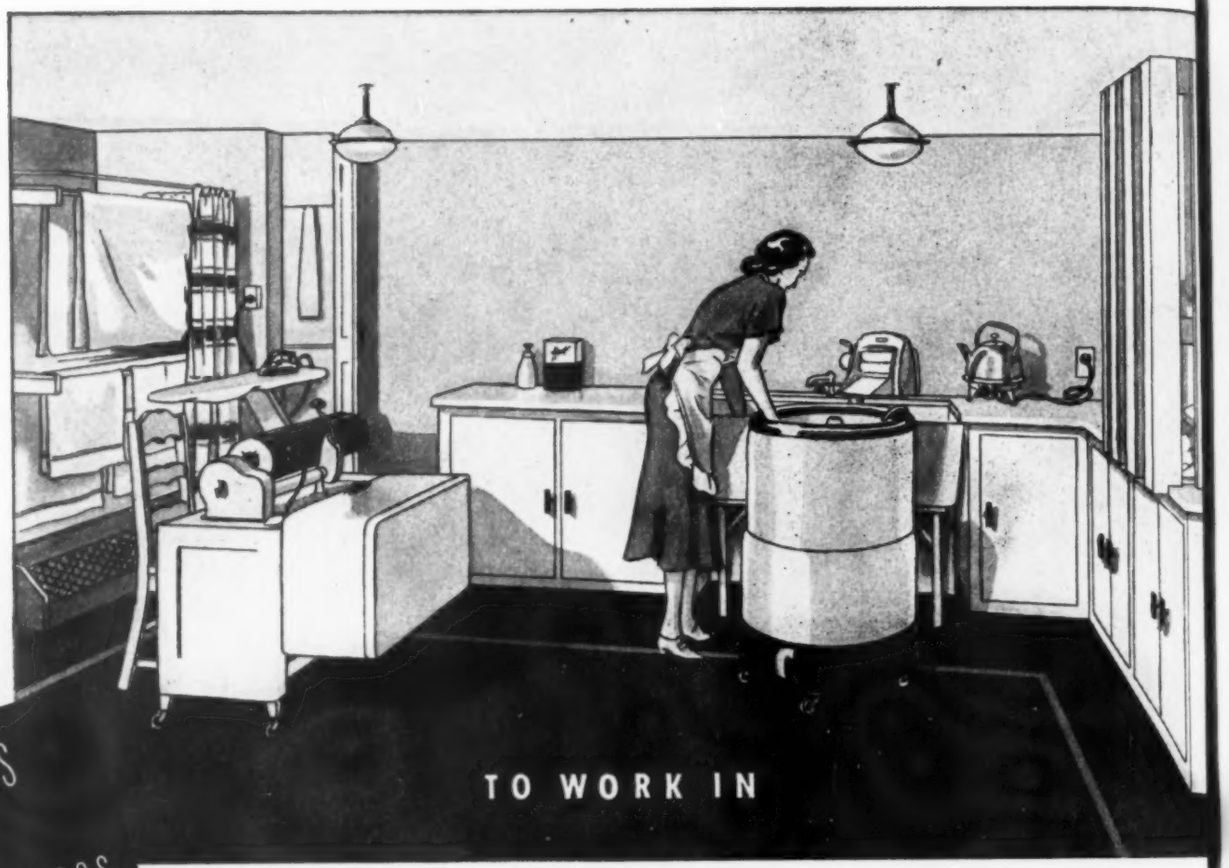

Home
Laundry

. . . . MAKE THE HOME



STEPS in the Laundry Process TO WORK IN

MODERNIZING the home laundry is the companion job to kitchen modernizing. The two often go together; plans for bringing the kitchen up to date often provide for a laundry in a remodeled pantry or other first floor space. Both kitchen and laundry modernizing have the same object—to make the working quarters of the home more attractive as well as more efficient.

LAUNDRY a Cheerful Place

SPRINKLING

IRONING

TO PLAY IN

We have shown examples of unattractive, run-down, gloomy kitchens turned into bright, shining and inviting workshops. The laundry also can be made a bright, cheerful place whether it is a basement or first floor laundry.

The laundry thus modernized can be a room used for more than one purpose. The laundry shown on this page is in the Five Star home built by the New York Power and Light Company at Albany, New York. Spotless, well lighted and pleasant it makes an ideal spot for the informal party. The table top ironer is a handy serving bar and the set tubs provide glass washing facilities. The children use it for a rainy day playroom and dad finds it ideal for his photographic developing and printing. The whole family benefits when the laundry goes modern.

Modernizing the Home Laundry

By TOM F. BLACKBURN

The basement in the average home is rarely the clean and spotless place one would associate with cleaning and ironing clothes.

In the two photographs below are fairly typical "modern home laundries." No attempt has been made to make the surroundings conform to the up-to-dateness of electrical home laundry equipment. No conveniences have been provided to aid in washing and ironing process. Contrast these with the two pictures on opposite page.

IN a letter home from Notre Dame, a freshman told his friends, "Boys, I gargle daily with Listerine, I bathe morning and evening with Lifebuoy, and I wash my undies in Lux, but still the girls avoid me!"

By this sweeping remark the freshman referred to a type of national advertising campaign which has been successful in sending the American public into frenzies of scrubbing and deodorization. It has demonstrated the lengths to which one will go to win the approval of his fellow-men.

Now it does not take any mental giant to see that the idea of dainty freshness links up far more closely with the home laundry than it does with any drug store concoction.

This situation is a made to order demonstration for manufacturers and salesmen of the beautified domestic laundry equipment being offered today. It proves the worth of a proper psychology as a background for a successful promotion. This the washer and ironer largely lack right now. We have sold the public on the cold, money saving possibilities of doing one's laundry, but we have not made it smart, stylish and proper for families to do so. We might be so bold as to say we had reached a psychological impasse.

In fact, today's washing machine and ironer are all dressed up with no place to go. For the average home laundry is a bare, murky room which any press agent could easily conjure up as a Black Hole of Calcutta.

It is not far fetched to say that the time is ripe to change a style and attitude. It is but a step to show the beauty-loving woman that the home laundry, turning out an endless abundance of mown-hay-fresh clothes, facilities for frequent quick changes, is really the short cut to personal daintiness. It is possible to convince women who take pride in housekeeping that a laundry offers results right before the eyes, gives that "feel" of accomplishment, and is coupled with almost effortless work; all mainsprings which inspires a woman to action.

LAUNDRY modernization is a move in this direction. The time has come when no more snowy washers and ironers should be shoved into areas as dingy as dog houses. The day is approaching when owners of swank homes should be proud to have their laundries photographed—instead of uttering horrified "noes" as happened when the writer of this article asked permission to take pictures to illustrate this article.

The job today is to make the laundry a bright room in the home to create an atmosphere, to make it cheerful, cozy and hearty. A room that a wife will welcome a friend into.

The typical home laundry today is a 10 by 10 foot space in the basement lighted by narrow slit windows. Overhead are pipes galore and the predominating color scheme is a drab, depressing gray of cement floor and walls. A bare, glaring light bulb on a cord completes the prison picture.

In this ideal or model laundry (Home Service Center, Woman's Home Companion) the set tubs are provided with a cover. This forms a perfect work surface for such part of the laundry operation as removing spots or stains.

The same laundry with tub covers removed. Compare this with the picture on the opposite page where the same wringing function is being done. What a difference when the surroundings are modernized for cleanliness and comfort!

Small wonder that a housewife hates to clump down the bare stairs Monday mornings, roll up her sleeves and pitch in. With clothes boiling no longer done, she is spared the ignominy of stringy hair and clouds of steam. But the telephone is far away, the atmosphere is dull, and the surroundings depressing. Even smart new equipment does not show off well

Basement cement floors may be painted with a dust-proof, moisture-resisting paint of a special type which comes in two or three colors.

Wallboard laid over exposed beams or two-by-four keeps dust out and adds an attractive finished surface to the ceiling of the laundry.

A proper lighting unit, designed for working purposes, should be installed over the laundry tubs and laundry equipment section.

Bright curtains hung over basement windows helps to carry out the idea that the home laundry is a bright, clean, attractive place to work.

Walls painted in light colors will not only add to the cleanliness and appearance of the basement home laundry but will aid in seeing.

Bright colored linoleums are another inexpensive answer to the problem of maintaining clean and good-looking floors for the home laundry.

and the whole show is nothing to write home about.

For surprisingly little the laundry may be refurbished up, outlook brightened, and made as smart as a Lilly Daché hat. Here is how to go about it:

DECORATING THE ROOM

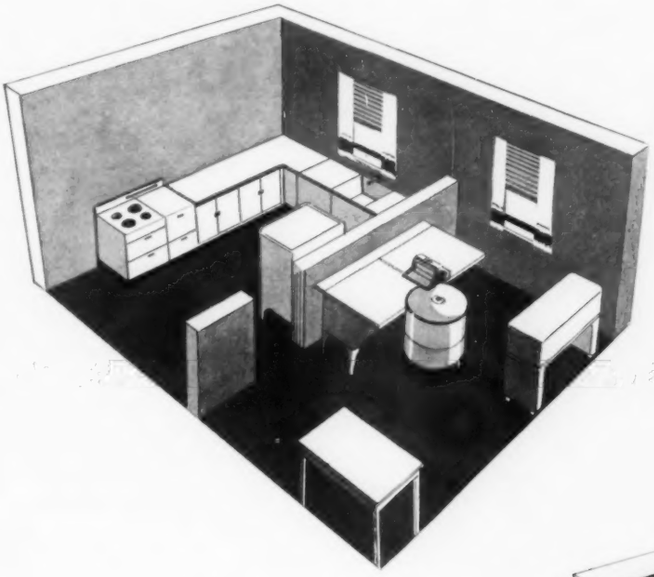
GENERALLY speaking, we may assume the walls and floor are cement or brick. The floors call for alteration first. In old buildings it is well to scrub the floor thoroughly with a fluid made of 1½ oz. of tri-sodium phosphate (Oakite) and 1½ oz. of soap chips per gallon of water. After rinsing, while the floor is still wet, it should be etched with a 10% solution of muriatic acid, applied with long handled brush. After it ceases to foam, it should be rinsed off, and allowed to dry. A few drops of water applied will show whether the floor is porous and ready to paint. A floor coating especially prepared for cement floors, should then be applied. Bright cheerful colors such as Chinese red or yellow are to be recommended.

BASEMENT walls are much simpler to decorate than floors. Casein paint in a number of pastel colors, whitewash, or oil paint (prepared for use on cement) can be sprayed or brushed on. The joists overhead may quickly be coated with white, or, if desired, may be covered with wall or plasterboard. Cheerful, colorful curtains should be hung, by all means, at the windows.

LAUNDRY LIGHTING

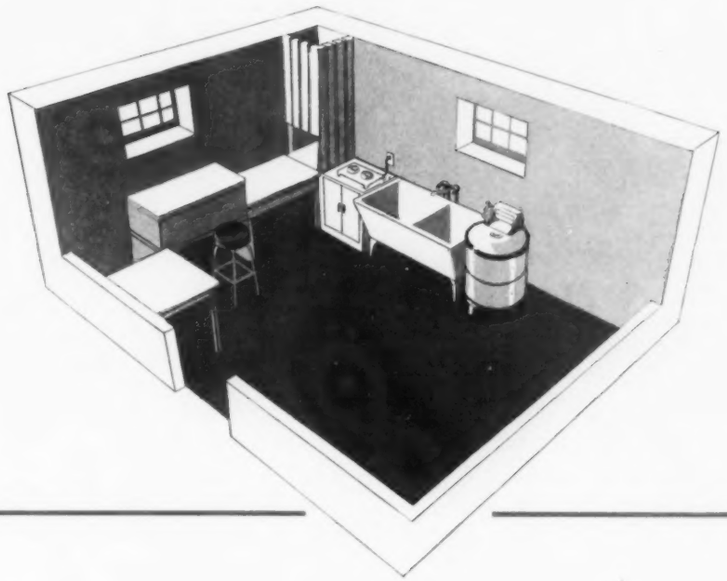
SPOTLESS clothes from a well equipped modern home laundry can only be assured if the lighting is as modern as the rest of the equipment. As many laundries are located in basement areas when daylight is at a premium, artificial lighting becomes more important. The simplest, most practical method of obtaining good light is through the use of white glass enclosing globes like the kitchen unit. Two units —one over the wash tubs and one over the ironing area—will solve the problem in most laundries. The globes should be 12" in diameter and use 150 watt daylight lamps. The daylight lamps aid in showing up stains and scorches. Some laundry plans lend themselves to the use of one ceiling fixture in the center of the room and wall brackets over the immediate work areas. Porcelain wall brackets with open glass shades that direct the light downward are to be preferred. Use 75 watt daylight lamps.

As the ceiling surfaces in most laundries are not adequate light reflectors and as the surroundings are often dark, indirect or semi-indirect lighting is not recommended. However, if the laundry is a completely finished room with a plaster ceiling, it may well use any of the fixtures recommended for the kitchen. As the recommended levels of illumina-



IN THE KITCHEN

When settubs are located in the kitchen area, the laundry may be made into an individual unit as shown in this cutaway. The dividing wall is broken down to show arrangement of the kitchen on the other side.



IN THE BASEMENT

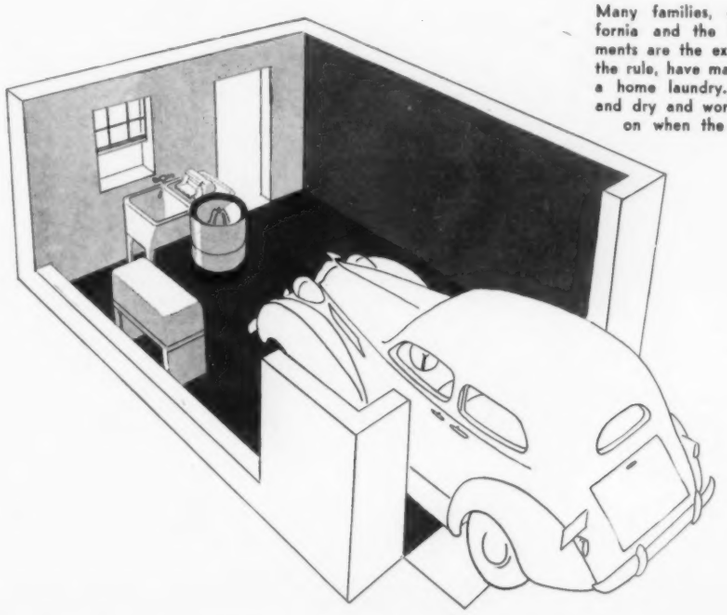
This cutaway shows a basement arrangement of a modern electric home laundry. Note the chute in the corner, connected to a receptacle on the first floor where soiled clothes are dropped for sorting below.

tion for washing and ironing are from 10 to 20 footcandles and these operations require rather large working areas, it follows that the direct light enclosing globes located in the ceiling directly over the work are the most logical recommendations.

GENERAL ARRANGEMENT

ARRANGEMENT of the laundry is designed to permit easy passage about the washer and laundry trays. With wringer type machines usually the wringer post is placed flush against the center of the laundry trays, so that clothes may be shot from washer to rinse water to basket with the greatest of ease. Late model washers permit adjusting legs from the floor to suit the housewife's height.

The well regulated laundry of yesterday and today has an old fashioned, broad beamed clothes basket, a porcelain topped table for sprinkling clothes, and a set of shelves



IN THE GARAGE

Many families, especially in California and the South where basements are the exception rather than the rule, have made the garage into a home laundry. These are clean and dry and work is usually carried on when the car is outside.

The modern basement which has been modernized for the home laundry, can be converted into a playroom at a moment's notice. Washer and ironer are portable and may be moved about at will to make necessary room.

for storing soap flakes, bluing and cleansing compounds. Slotted clothes chutes which permit circulation of air about soiled garments are preferred.

Racks or wires on which to hang clothes, or a gas or electric dryer, complete the picture. None of these latter facilities take up space in the laundry.

Possibly the home laundry room has been the last to be modernized because of the Monday tradition. There has been a feeling that one day a week usage did not warrant expenditure for improvement. However, as time marches on, a new attitude toward this laundry space is arising. Washers and ironers, thanks to their casters, may be easily scooted about out of the way. The scene is set for additional employment for the space.

THE WORKBENCH

STANLEY and other makers of carpenter tools have discovered an eager market for kits among home owners. During the depression large lumber companies made up work benches and were surprised at the way they were snapped up. No amount of bending over a desk on a white collar job will breed out the lust for working with tools, it seems, in the breast of the civilized male. Compact and out of sight, the workbench holds the tools when laundry is being done. At other times the long curls from the plane can sprawl luxuriously over the floor, and lumber may be tossed about with abandon. Easily swept up muss causes no wear and tear on houswifely tempers.

Some basements are being transformed into combination workshops and home laundries. Laundry equipment lends itself readily to use in spaces which may later be put to some other useful purpose.

THE PHOTOGRAPHIC DARK ROOM

IN the last six years the vogue of miniature photography has swept the nation. Expensive cameras are worn like watch chains once were. Any good woman who has permitted her man to develop pictures in the bath or kitchen knows that the drippings of photographic chemicals make the nastiest and most permanent stains in the world. Linoleum is forever discolored, bath towels become nauseating in appearance under the brown liquids. The basement is the only place for such trifling as spilled liquids may be swept into the drain. In a twinkling the laundry room takes on a useful quality in this situation. The porcelain topped table is gorgeous for trays, the enlarger may be plugged in where the electric iron does daily duty, an the addition of a dark shade to the window keeps any stray light from peeping in.

PLAYROOM

NOT every home has space for a basement whoopee room, where litter may be allowed to lay for convenient clean-up moments, where old furniture may receive cigarette burns without heartbreak. And on rainy days when the romp of imprisoned children sounds like brawling in the market-place, a place to play in the laundry is manna to the heart of a grateful housewife.

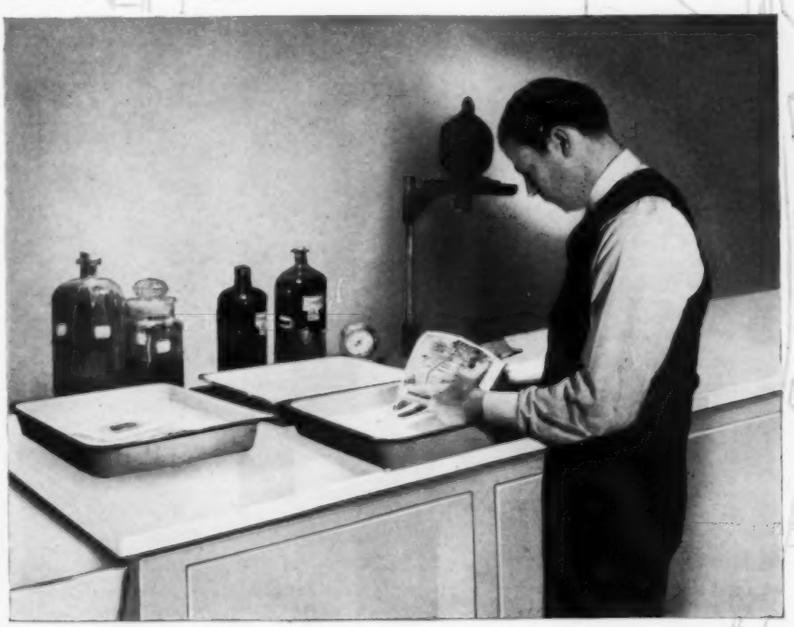
Again the ability to roll off washer and ironer permits spreading out of toys on the floor, the standing up of blackboards in the corner. The crash of children's feet is not heard upstairs, and a box permits stowing away of toys when the day is done. In the hot climates of Kansas, Texas and points west, many a family keeps a card table, a few old wicker chairs and floor lamp handy—and enjoys sportshirt coolness and informality in afternoon games.

COST

THE expense of putting a laundry in shipshape is the lowest decorating expense a family can face. With the paint running from 15 to 20 cents a pound, the room may be done for far less than any upstairs. A large porcelain reflector indirect light fixture will not run much beyond $12. Curtains may be hand-me-downs, soap cabinet and porcelain topped table are inexpensive. It is the cheeriness of the color and light that really makes the laundry a happy place to work, an optimistic spot to which a woman will conduct her friend for a visit while she works.

Topflight laundry equipment looks the part when placed against a snappy background. On the other hand, aged washers and ironers seem woefully shabby if placed in up-to-date surroundings.

A modernized home laundry is so logical, so necessary for present day merchandising, that the curtain is already rising on dealers who say, "Let us modernize your laundry, Mrs. X. We can do it in a couple of days, and it'll only cost you so much." All done up in a ball of wax, like that.



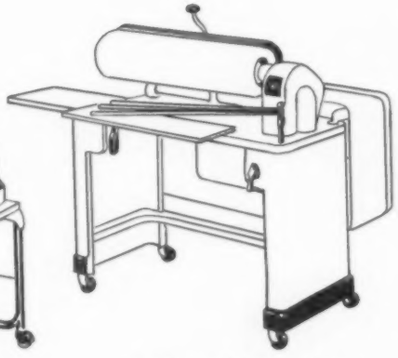
More amateur photographic darkrooms are located in the basement laundry (where the set tubs and running water come in handy) than any other place in the house. Another example of the modern home laundry serving a double purpose.

MODERN • Equipment for Modernizing Home Laundries

Skirted type washer, large capacity, complete with de luxe wringer, pump and all latest improvements.

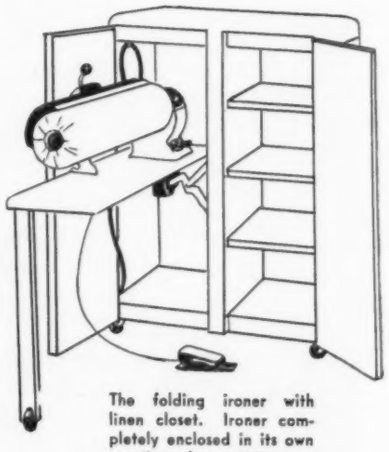
For large families the double tub washer speeds up the washing process.

The rotary electric ironer with cabinet top, table high.



In this model the cabinet top swings down at the back.

Simplest form of electric ironer, low in price, high in labor saving.

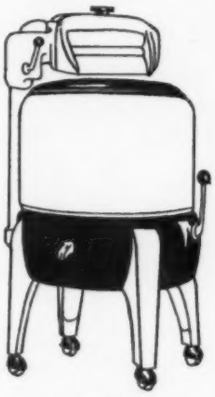


The folding ironer with linen closet. Ironer completely enclosed in its own section when not in use.

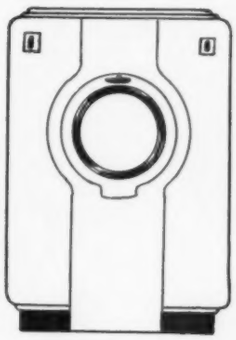
FIRST step in laundry modernizing is to replace the old washer with one of the new modern washers of which the principal types are shown on this page. Modern washers are fast as well as thorough in their cleansing. Equipped with the wringer or the centrifugal dryer they handle everything in a household that needs laundering, from the garments of the sheerest material to the heaviest blankets.

The wringer, important feature of most washers, is a prime example of the difference between modern washers and those of a few years ago. Among other features of the modern wringer which older models do not have are: (1) Automatic flopper boards; (2) Integral safety releases; (3) Semi-automatic reset lever; (4) larger diameter and softer rubber rolls; (5) Feeding boards for faster and easier way of feeding clothes into wringer; (6) Pressure indicators to show amount of wringing pressure; (7) Automatic roll stop which stops the movement of both rolls when safety release is operated; (8) Exterior finishes, including bonderizing and the baking of lacquers in various colors to match washer and, of course, also chrome and nickel plating.

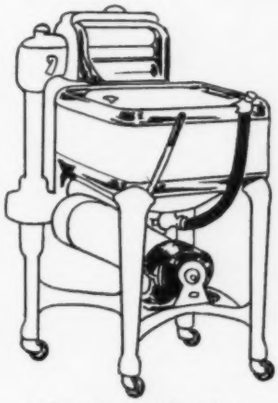
The ironer is the desired companion to the washer. The hand iron has performed a long and honorable service and is still important in the home laundry, but for the heavier part of the work the modern ironer has become indispensable to the modern home laundry.



The standard type wringer washer, sturdy, efficient and long-lived.

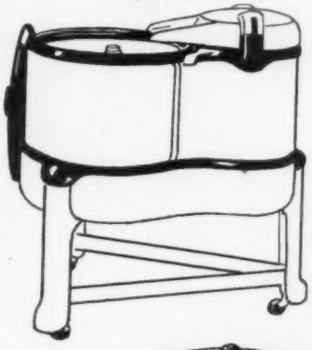


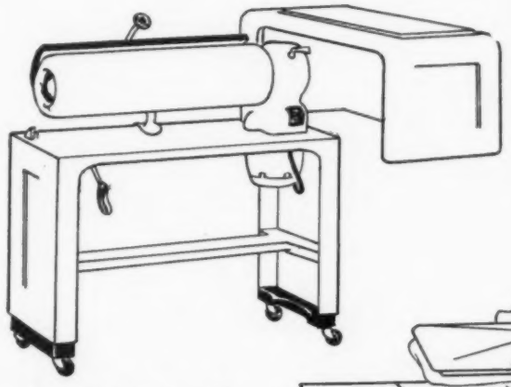
This appilance washes, rinses and extracts the water in one cycle of operations.



Aluminum tub and a square shape are distinctive features of this washer.

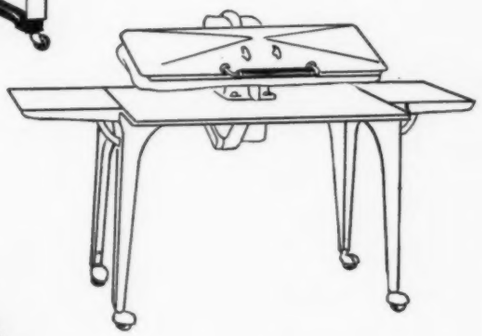
Two examples of the centrifugal or spinner washer. The clothes are washed in the large tub and then spun line dry in the smaller compartment.

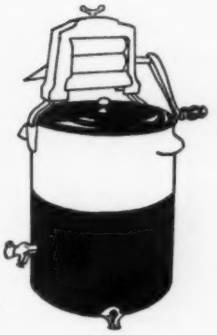




(Above) With this model the cabinet covers swing to the side.

(Below) The press type ironer operates by bringing the heated flat shoe over a padded surface.





A hand wringer is a part of this small washer for baby's things. It can be stored in any closet.

Automatic hand iron with heat control on handle

Automatic iron with heat control on iron.

This washer is distinctive for a new washing action. This action washes by a continuous circulation of water at high velocity.

The farmers' wife saves herself from hard labor with this washer operated by a gasoline motor. If electricity eventually comes to the farm the change to electrical operation is easy.

Home Laundry Costs
VS
Commercial Laundry

The Home Laundry Pays For Itself

Weekly Cost Washing and Ironing Family of Five Persons with Moderate Incomes

	HOME LAUNDRY WITH WASHER AND IRONER	POWER LAUNDRY
Laundry Cost		$2.70
Extra wear and tear (depreciation over home laundry rate in clothes)		.38
6% interest on home laundry equipment	.17(a)	.01(b)
10% depreciation	.29(2)	.02
Cost of washing:		
Hot water and soap	.13	
Current	.05	.065
Cost of ironing:		
Current	.18	.055
Cost per week	.82	$3.23
	5¾ hours(c)	3¼ hours(d)
Cost per year	$42.64	$167.96
Saving per year	$125.32	

(a) Washer and ironer figured at $69.50 each. Misc. $10. (b) Hand iron only. (c) Entire time to do all the wash at home. (d) Time spent to finish wash not sent to the laundry.

By

MRS. RALPH BORSODI

"WHEN you count your time, it is cheaper to send the wash out." So says the housewife who for some reason or other does not do her own family wash in her own electric laundry. But my experiments show that it is just when you *do* count your time that it is NOT cheaper to send the wash out.

In 1938 it is actually more economical to do the wash at home with modern equipment than it was in 1935 when I last made a study of the subject for *Electrical Merchandising*. The costs of doing washing and ironing at home have varied very little over the years; if anything it costs less today than three years ago. For one thing, washers and ironers cost less and are more efficient than they were even three years ago.

The charge which the laundries make for wet wash has advanced somewhat, as is shown by the following table:

YEAR	WET WASH CHARGE
1927	75¢ for 25 lbs.
1929	80¢ for 20 lbs.
1933	50¢ for 10 lbs.; 4¢ ea. extra lb.
1934	80¢ for 20 lbs.
1935	49¢ for 12 lbs.; 4¢ ea. extra lb.
1938	60¢ for 12 lbs.; 4¢ ea. extra lb.

Thus wet wash, which furnishes the real volume and revenue of the commercial laundries, because the majority of families can not afford the more expensive services they render, has gone up though incomes have come down.

The cost of the popular thrift bundle is now usually about $2.25 for 17 pounds with 10 cents for each additional pound and 5 cents additional for each shirt. This means that the average bundle of 20 lbs. costs $2.25 plus 30 cents for the extra 3 pounds and 15 cents for the average three shirts in each bundle; a total of $2.70. This is .55 cents higher than in 1935 when the same bundle cost $2.00 for 20 lbs. with 10 cents for each additional pound and five cents for each shirt. It is true that the best laundries are now doing better work than they used to do, but with an addition of 55 cents to their charges for this type of service the saving by doing the work at home is greater than ever before. The inducement to the housewife to use better equipment and to do better work has been increased rather than lessened. On the basis of present day conditions, the housewife can earn $125.32 per year by abandoning this sort of service and installing a modern home laundry. By spending 2½ hours more per week in her laundry, she earns $2.41 per week; this is more than a dollar an hour.

The facts are undeniable. It is not cheaper to send the wash out even when women do count their time. Time spent in the laundry at home would not only enable them to pay for the best equipment which they might desire to buy; but once the equipment is paid for, it would free a substantial part of the weekly budget for all sorts of things which the average family cannot now afford to buy.

Left . . . The modern electric water heater is an integral part of the planned kitchen. Its rectangular shape and fine finish make it as handsome and easily-cleaned as the electric refrigerator. Table-top models, designed to be installed next to the electric dishwasher are shown on the following pages.

WATER HEATING BECOMES ELECTRIC

By LAURENCE WRAY

FOR a modern home laundry it is taken for granted that an abundant supply of hot water is available. It is possible of course, to heat water as needed by using a small electric stove or hot plate, but we want to discuss a little further here the modern equipment available for heating water electrically, for pumping it into the home and for "conditioning" it—that is, softening it in those hard water areas where the condition of the water makes it difficult to use in any cleaning process.

To say that a plentiful supply of hot water is one of the first necessities of modern living is to be banal. Ever since the day when the American bath room became the most prized possession of the home owner, hot water, next to cooking, has become the principal objective where the physical plant of house was concerned. From the primitive open fire to the coal stove, to the storage tank connected to the stove's fire box, man has been on the lookout for a simpler, cleaner, cheaper and more trouble-free method of having hot water on tap at a moment's notice.

In making his hot water supply automatic he has made great strides in perfecting the mechanism. Today, electric and gas automatic water heaters which will supply the entire family's hot water requirements, are available at low first cost and subsequent cost of operation. But there are still millions of homes throughout the country getting by with semi-primitive methods of heating water. There are thousands of inadequate, manually operated, tanks installed in kitchens and basements. There are skuttle-a-day stoves connected to water tanks in the basement. There are kerosene oil heaters with their dirty wicks and constant need of attention.

The small, portable type of water softener is shown above attached to the water supply at the kitchen sink. These units do a water conditioning job at a single point.

Knowledge of the modern electric water heater with its carefree, inexpensive cost and operation should be in the hands of all home owners contemplating bringing the mechanical operation of their home up to par.

There existed, and still exists, in the minds of many of these homeowners that the cost of heating water electrically is excessive. The reverse is true. Electric water heaters, sufficient to supply the requirements of an average family for all purposes of cooking, bathing and laundering are available at moderate prices. These are automatic devices that insure constant supply. Public utility companies throughout the major part of the country, embracing some 12,000,000 homes wired for electricity, have instituted rates for heating water which make its operating cost comparable to any other form of fuel. In many cases this has been accomplished by what is known as the "off-peak" system. In other words, the utilities have found that the heaviest use of electricity in the home came between the hours of seven in the morning and nine in the evening after which it dropped off drastically. Obviously, from the power company standpoint, it was profitable to create a demand for electricity which would utilize some of this idle generating capacity after the hours of normal use.

Generally speaking, the principal arguments where automatic water heating is concerned have to do with the size of the tank necessary to take care of the requirements of the average family of four or five people. A number of yardsticks have been established based on surveys made among members of families and the per capita consumption of water by each individual during the average day. It seems pretty generally agreed upon that a 66-gal. capacity tank could take care of the average family's requirements with some to spare. This average family consists of four people using a minimum of 50 gals. of hot water each day. The smaller family, of course, would use somewhat less and the larger family somewhat more. These estimates are arrived at in a number of ways. A bath, for instance, requires about 15 gals. of water, about one-third of this will be cold water and two-thirds hot. And so the average family of four people, especially if they are addicted to many baths or long showers, would consume anywhere from 30 to 50 gals. In addition to the bath there is the laundry requirements and general kitchen requirements such as dishwashing and cooking.

IN THE KITCHEN

IN THE BATHROOM

One of the superiorities of electric water heaters over other types of equipment is that they may be installed at any point the home-owner desires. In the four pictures shown here are typical installations in various parts of the house. In the picture at the far right, the water heater is a table top model located next to the wash basin in the laundry.

Some of the types of electric water heaters designed for "off-peak service" come equipped with two heating elements, separately metered. One of these elements automatically goes into operation when the off-peak time starts. The reason for this is that water heated on an off-peak basis usually is billed at a considerably lower kilowatt hour cost than the regular daylight electricity demand. In other words, this off-peak system is a kind of 50-50 arrangement whereby the utility sells its idle generating capacity—at a lower rate, to be sure—and the consumer benefits from the most efficient type of water heating service at a cost comparable and in many times even more favorable than competing fuels such as gas, coal or oil.

It should be remembered, too, that the family who has been unaccustomed to liberal hot water supply prior to the installation of the heater, would be pretty lavish in its use. That's just another thing to remember when figuring minimum requirements.

Location of the water heater used to be another source of trouble. Generally they are placed in the basement alongside the furnace or in the kitchen in connection with the coal stove. This was necessary in order to heat the water with coal, gas or other fuel and to take care of the flues and air vents necessary with the older type of equipment. The automatic

electric water heater, however, is above such consideration. It may be installed anywhere. Kitchen planning authorities today are generally agreed that a location somewhere near the kitchen sink—especially if the laundry work is done on the first floor of the house—is most desirable. The plumbing system of the house has a good deal to do with the problem of location and the eventual choice should find the heater installed where the minimum of piping for incoming and outgoing water is necessary where the three largest use centers—bathroom, laundry and kitchen are considered. It should be borne in mind, too, that modern styling of electric water heaters, finished in handsome porcelain tanks of rectangular, round or square shapes make them desirable adjuncts to the kitchen planning layout. Water heaters have even been designed to fit in with the low cabinet, table-top style of kitchen furnishings.

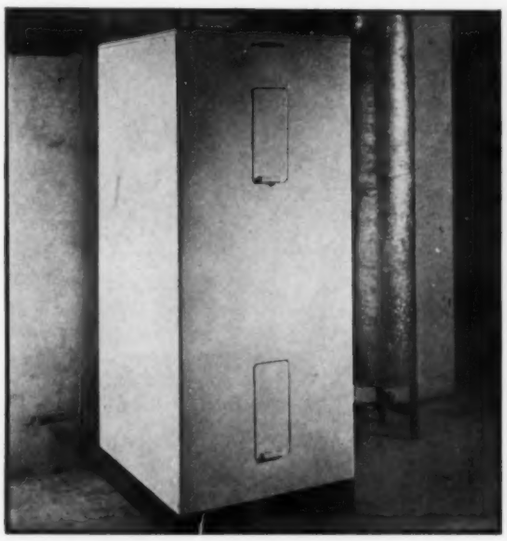
Construction of these modern water heaters leaves very little to be desired from an efficiency standpoint. Tanks are supplied in Monel metal or in galvanized copper plated steel. In soft water areas, the Monel metal type of tank is better suited to withstand the corrosive action commonly associated with soft water; in hard water areas the galvanized tank has a satisfactory life.

zeolites. A tank of this type connected to the central water system of the house, and located in the basement, is a fairly expensive original investment but it will pay for itself many times over as the years go by. It prevents the clogging of pipes, adds to the life of clothes washed, and preserves the health of the family who use it for bathing, drinking and cooking purposes. The operating expense of a unit such as this is very low and the only maintenance necessary is an occasional regeneration of the zeolites (which tend to become exhausted) by flushing the contents of the tank with brine made from common salt. These tank-type water softeners also are available in smaller sizes and may be installed at the bathtub or the kitchen sink and connected to the water supply at that point. Naturally, their original cost is considerably less than a system designed to take care of the water supply of the entire house. There are many ramifications to this somewhat technical subject of water softening which the exigencies of space do not permit of greater elaboration here.

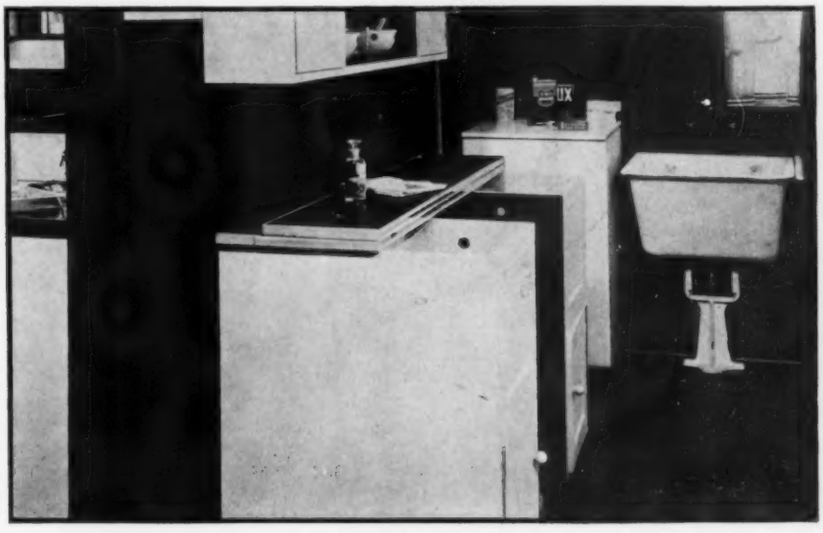
For the house lying beyond the city water mains there is of course the first problem of creating a running water supply. Here again there is an automatic electric system designed to come to the rescue. Two common types of

This is a low-cost, small capacity heater designed for installation at the point of use. It's rated at 1,400 watts and has 1½ gal. capacity. A thermostat shuts off heating element when water reaches 150 degrees.

AT BOTTOM . . . A table-top type of electric water heater, installed next to dishwasher, is shown in relation to the electric refrigerator.



IN THE BASEMENT



IN THE LAUNDRY

This question, incidentally, of soft water and hard water areas is one that can scarcely be overlooked in any consideration of the water sytem of the house. Sometimes water is only temporarily hard, containing bicarbonates of lime, magnesium or iron and may be softened by boiling in which case the minerals are precipitated as sediment on the bottom of the vessel. Permanently hard water, on the other hand, contains sulphates or chlorides and can be softened only by specific chemical treatment. This chemical treatment usually is accomplished by passing the water through a tank type of water softener filled with crystals known as

automatic electric water pumping systems are on the market—the shallow well system and the deep well. The former is designed for use at depths up to 22 ft. or less where wells, cisterns, streams or springs make such shallow pumping feasible. The deep well system would take care of those sections having none of these advantages where water must be sought at greater depths. Selecting the proper type of water pumping system should take into consideration the daily water requirements of the household which in the case of the average small house would run from 240 to 250 gals. per hour minimum pump capacity.

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electrical modernizing calls for *adequate wiring!*

To fully appreciate the economy as well as the luxury of modern electrical appliances in the home it is necessary that adequate wiring and outlets be provided for their use.

If you want to know the how, when, where, what and why of adequate wiring, consult the

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ELECTRICAL LIVING

● Every electrical addition to the home makes that home more modern, even if the home is the newest and shiniest of chromium upholstered penthouses. For modern living is electrical living and you can hardly have too much of it.

● Leisure hours depend for comfort on electricity: the good light for reading or bridge, the radio with its endless fund of entertainment, the handy and handsome table cooking devices that carry casual cooking and eating throughout the house, into the rumpus room, out onto the porch and the lawn.

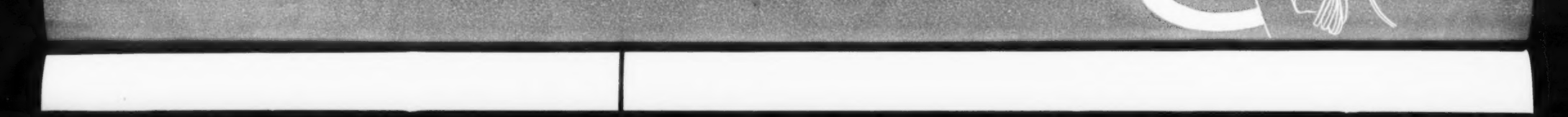
● All these facilities for better living operate so easily and so inexpensively.

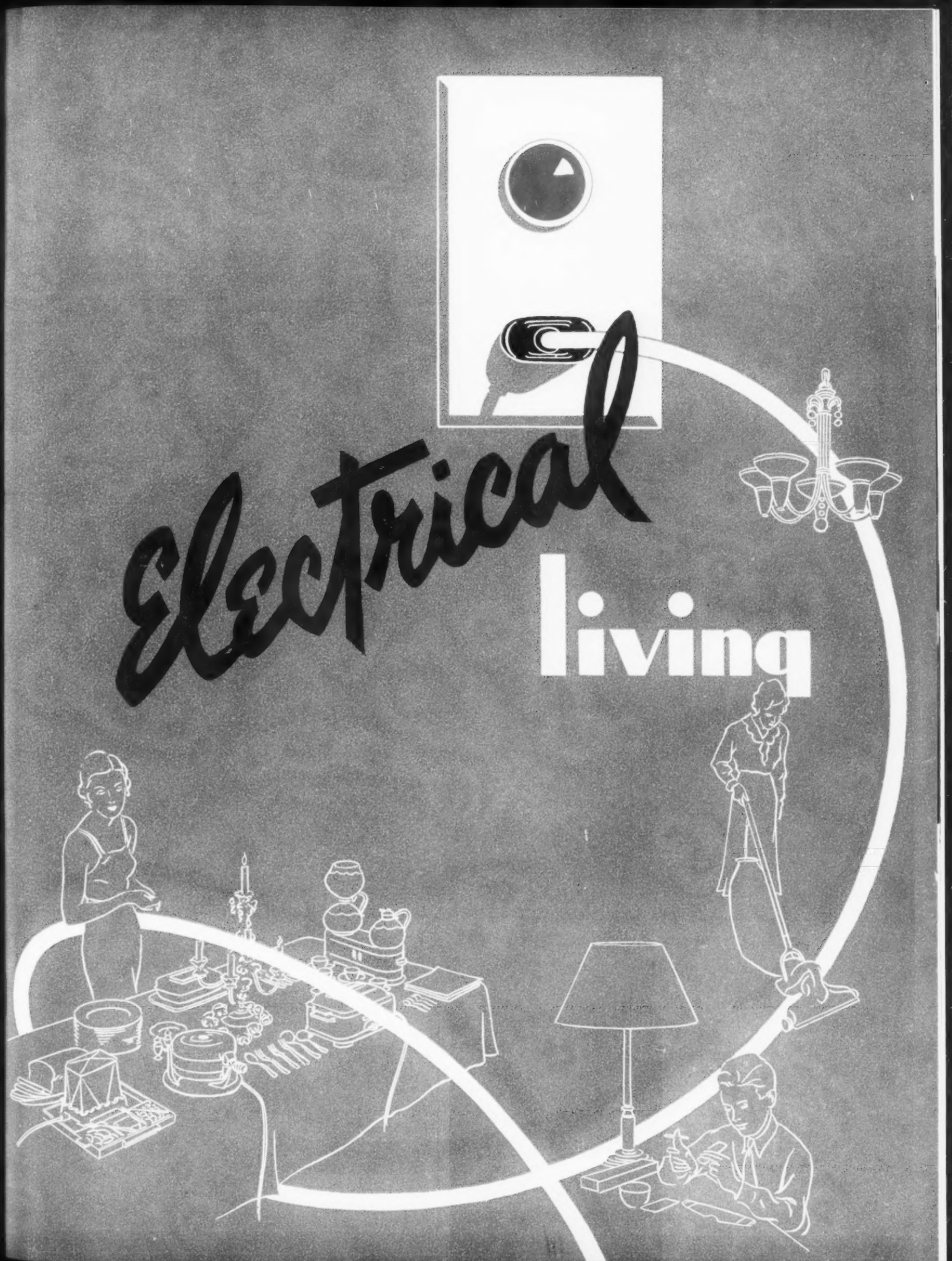
● An attachment plug connected to a convenience outlet and the magic force of electricity is set to work by the throw of a switch.

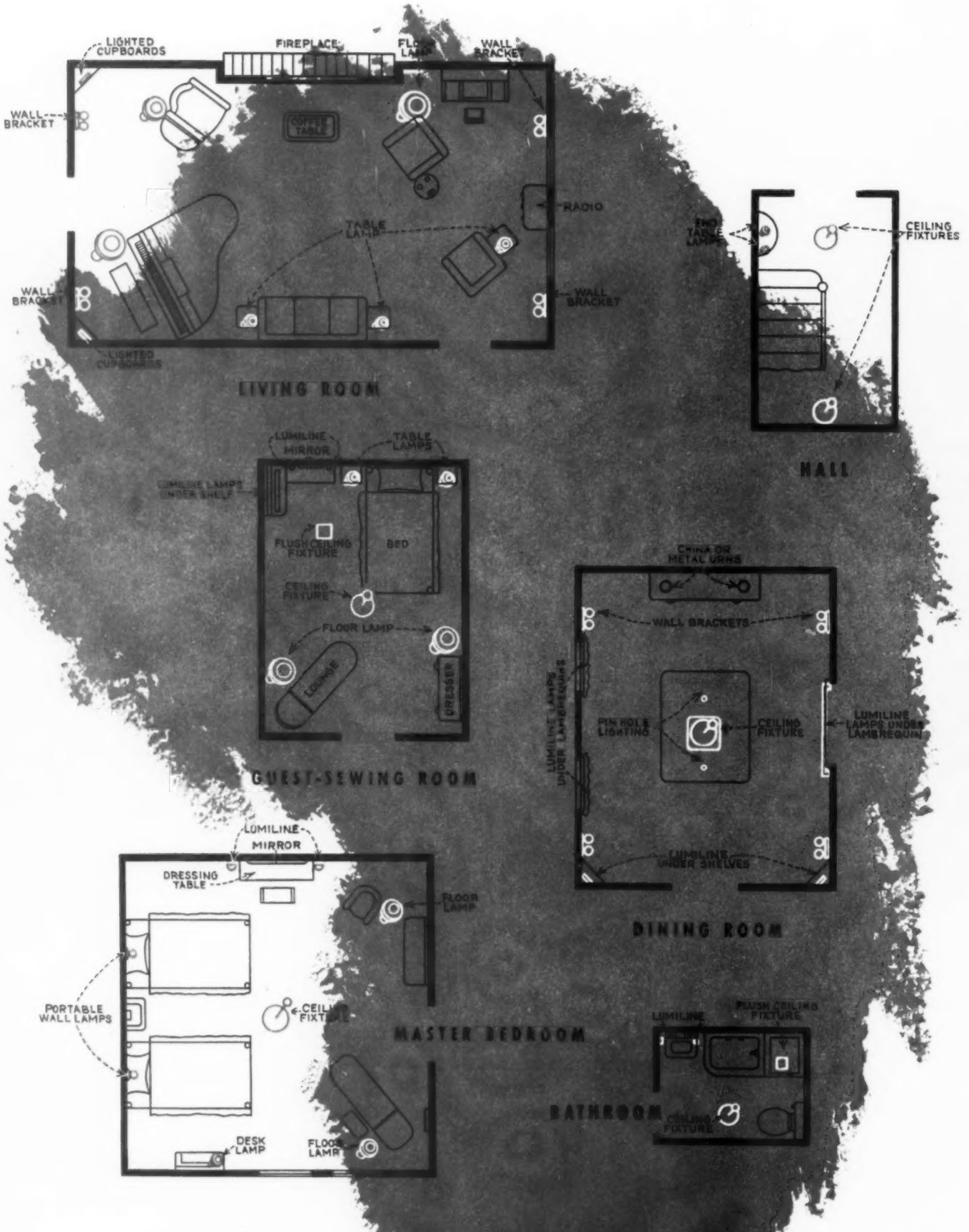
● Modernization, however, for the true comfort and convenience is not complete unless good wiring has provided outlets for your appliance use wherever they are needed. Good wiring, adequate wiring, is inexpensive and is easily installed.

● Right at this time the electrical industry is making a special effort and special plans to provide adequate wiring at moderate cost and on easy terms.

● A good electrical contractor is an essential adviser to any modernizing job. For on his service in providing wiring adequacy, electrical comfort depends.



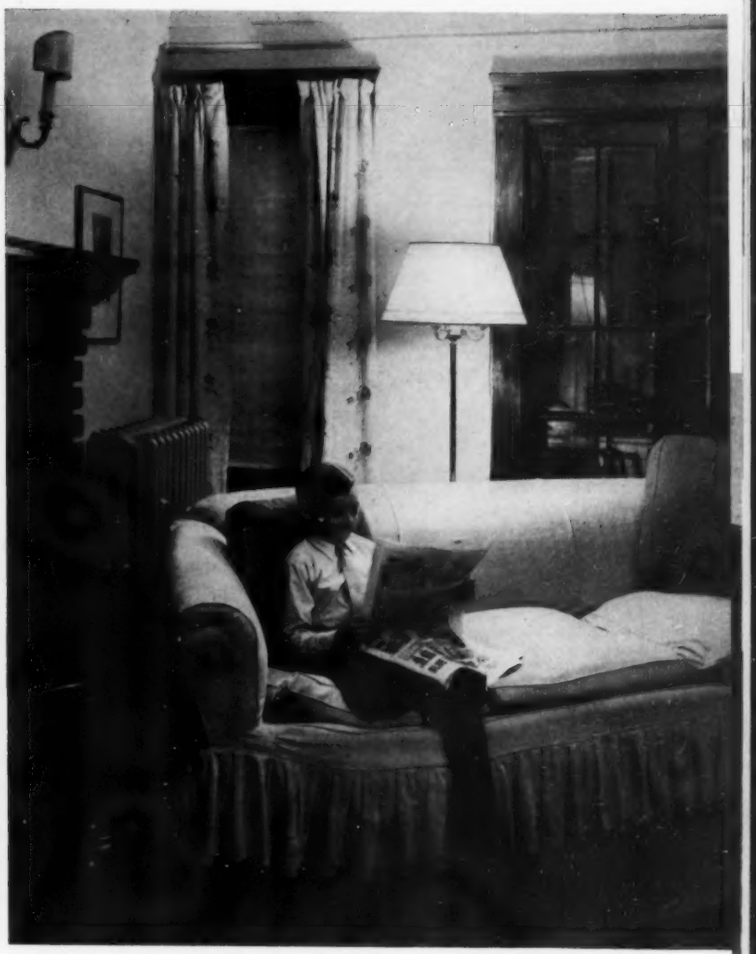

Electrical
living



Layouts for Good Lighting

the LIVING ROOM

BEFORE Old-fashioned lighting is harmful to youthful eyes, as this typical lighting scene shows.



A Better-Sight lamp with a reflector spreads adequate light evenly. **AFTER**

ONCE the kitchen has been modernized the balance of the house suffers by comparison. Stepping from a sparkling new kitchen with its streamlined cabinets and work surfaces into the living room, which a few weeks ago seemed quite cozy, is like stepping from 1938 into 1918.

The trend toward living more comfortably through greater use of electricity increases each year, and since the living room is the social center of the family it is next in line for remodeling. The dim general gloominess of the living room since the new kitchen has been installed is more apparent in the late afternoon. So we examine the lights. Most of the lamps now used in living rooms were bought for their artistic qualities—pottery bases or unusual shades, with no thought to the amount of light they produced.

Many living rooms do boast of a floor lamp with a good sized bulb where father reads the evening paper. It may even be one of the newer Better-Sight lamps with its concealed bowl. Within a certain radius this lamp is doing its job of providing good light, but one such lamp in a room is not enough to provide balanced illumination, softly distributed.

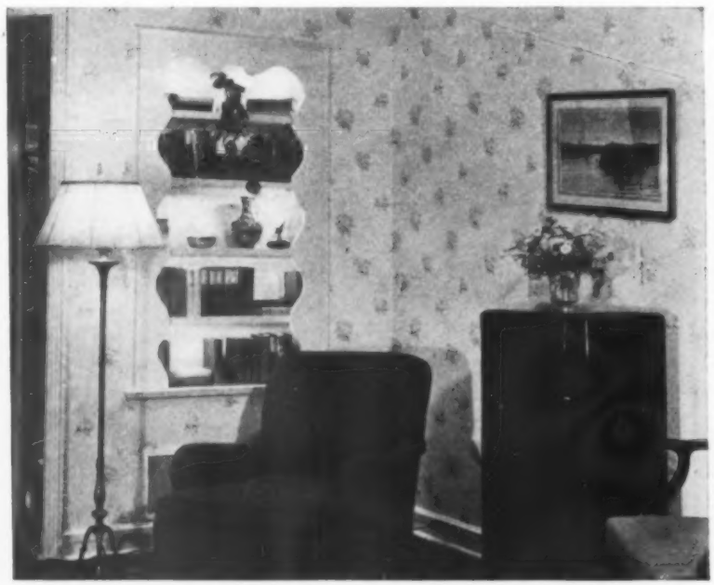
Lighting well done brings out new beauty to rugs and draperies, enriches upholstery fabrics and points up the loveliness in pictures. Planning new lighting for our homes should be as exciting as planning a new wardrobe.

By

ANNA A. NOONE

Home Appliance Editor

The lumiline lamp which casts such a cheery glow in this attractive living room is an interesting use of lighting for decoration. The fireplace, too, can be electric. Photo from Albany's Five-Star Home.



Another decorative lighting feature is shown above. It consists of concealed lighting in the book-shelf area. For general reading, however, a Better Sight floor lamp is provided.

The flush ceiling light over a recessed window seat below is another attractive form of lighting for decoration. Note the nice pattern it makes on the venetian blind and bookshelves.

wardrobe or doing over the upholstery.

There are a few simple rules to be followed: No dark corners, no glare and no hard black shadows. Lamp bulbs should not be even partly exposed. Highlights and reflections on work from glass table tops or other glossy surfaces interfere with easy seeing and should be remedied. Science-of-seeing standards say that the bowl of an I.E.S. lamp should not be more than 28 to 36 inches from the visual task to be done; from 3 to 10 footcandles of light should be evenly distributed tthroughout the room for ordinary seeing, and there should be enough floor and table lamps that can produce 15 to 50 footcandles in locally lighted areas for all tasks such as sewing, reading and bridge playing. And these lamps should be placed in the room so that the light is balanced and softly distributed throughout.

If these rules seem a little too technical, don't let them confuse or discourage you. There is a home lighting specialist on the staff of your power company ready and willing to come to your assistance with her sight-light meter and her expert advice.

These New Reading Lamps

Of the various types of indirect and semi-direct lighting now recommended, portable lamps bearing I.E.S. approved tags lend themselves best to remodelling a living room. Out of the nine different types of floor, table and wall bracket models available for different furniture uses, the right lamp for each problem is easy to select. And the diversity of styles helps in the decorative plan of the room.

There is a table study and reading lamp with its 8 inch concealed bowl which may be used on a large living room table; it is also good on a table behind the davenport, or on the left hand side of a flat-top desk. A smaller end table lamp may be used on end tables approximately 26 inches high, but should be avoided on high end tables near low scaled furniture.

Three other floor models—a study and reading lamp, a swivel floor model and a bridge lamp, all with smaller 8 or 9¾ inch bowls are good placed slightly to the rear of lounge chairs, davenport ends, or at the left of a secretary, small table and slant front desks. The swivel floor lamp with its adjustable arm brings light source nearer work surfaces; and the bridge

For more formal types of fixtures in the living room, this is a modern counterpart of a period design.

lamp, because of its smaller size, is often most effective beside occasional chairs, small writing desks, tables or where physically or decoratively larger lamps are not suitable.

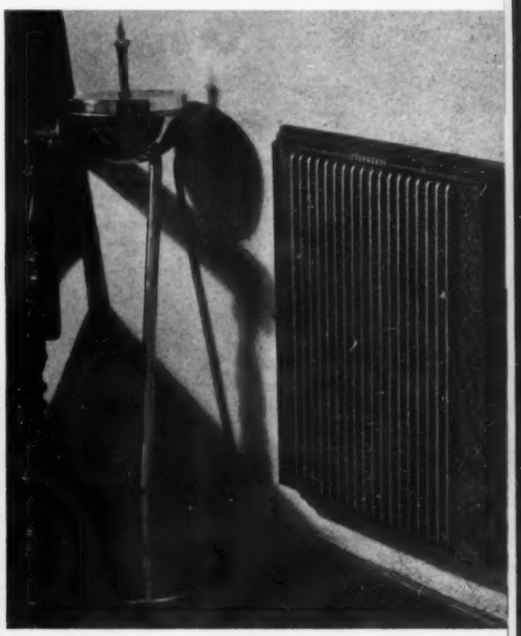
A ceiling fixture in the living room is very desirable. There are many types to chose from ranging from the purely decorative to the purely practical.

The budget permitting, many beautiful decorative and architectural effects are possible through the use of concealed lumiline brackets in the living room. Over the fireplace, to illuminate a picture; behind the top of a china closet with delicate scroll work; and under the shelves of bookcases and corner cupboards, this soft opal glass light brings into relief rare books, pottery and other trophies.

Radios Are New Also

Next to lighting, the radio plays a most important part in the living room. The old antiquated radio with its hums and squeaks has no place in a room with modern lighting. The steady advancement in the perfection of radios brings us today automatic switch button tuning as the latest improvement. By simply pressing a button your station comes in. Other sets not equipped with this feature have new and convenient dial systems easy to read, operate and tune. Short wave reception has definitely graduated out of the police-call-ships-at-sea stage, and is here to stay, for among other advantages, the short wave will bring you symphonic concerts from Berlin, Beyreuth, Salzburg or Rome.

The better reception and tone quality of the larger speaker in a console makes it the logical living room radio. There is a model for every interior decorating problem. Placed between



● Living room radios are no longer square ugly cabinets. They can be made to fit any decorative scheme as this end-table or arm chair model demonstrates.

● Clocks have joined the march of modernization. Here is the familiar tambour mantle type, complete with chimes, yet run noiselessly and tirelessly by electricity.

● In sections of the country where central heating is not necessary, these space heaters do a good job of warming a specific room or area. They have been designed to fit any type of space.

● Coffee in the living room, or any other light type of buffet entertaining is simple with the variety of small table appliances of today.

A percolator and toaster at the table make breakfast an easy, informal affair.

two windows with a torchere urn on top is perhaps the simplest treatment. Lacking the window space, and if yours is a "problem" living room so far as placing the radio is concerned, an end table model is the answer. Tucked away by the arm of a big comfortable chair, you have entertainment at your finger tips.

Look At Your Fireplace

To many home makers a living room is not complete without a fireplace. The ideal wood-burning fireplace is not practical in some sections of the country. So, an artificial fireplace with its effect of dancing flames and bright fire frequently makes an otherwise austere room glow with life and hospitality. There are two types: The purely ornamental log, which, while simulating fire, gives off no heat; and the log which combines decoration with a glowing, cheery warmth distributed evenly to every part of the room.

Time Never Stands Still

A lovely and serviceable addition to the decorative scheme of any room is a self-starting synchronous electric clock. An array of massive mahogany or walnut mantel clocks, delicate modernistic designs in mirror, glass, and moulded plastics are available for mantel desk and table use. Tambour style mantel clocks with Westminster chimes in various period furniture styles are also attractive. Short wave radio enthusiasts will like the clock which tells time "from Winnepeg to Bombay" as it indicates the time at the point from which foreign reception originates and tells at a glance the time in your own zone. A revolving outside numeral disc divided into dark for p.m. and light for a.m. shows the time around the world.

Spot Heating

In regions where the climate is customarily so mild that no regular provision for general house heating is made, a space heater of the portable or built-in wall type is particularly useful. Electric heating adapts itself to intermittent use. It is clean and healthful, and its accuracy of temperature control and ease of operation recommends it to many.

Entertaining

We cannot think of a more hospitable custom than that of serving coffee in the living room after dinner. For company nights, a coffee service with a good sized electric coffee maker, percolator or urn is an item every hostess will want. Various sets are offered by manufacturers for just this finishing touch to a perfect dinner party.

Here's the type of lighting fixture that makes the dining alcove a pleasant and inviting place to eat.

DINING ROOM

Look at Your Lighting Again

SNOW white linen, sparkling china, silver and glassware take on an inviting gleam under bright, cheerful lighting. And the absence of glare through the use of one of the beautiful fixtures designed for dining room use will be appreciated by those at your table. Some hostesses will always prefer soft mellow candlelight for their dinner table. For this type of table decoration wall brackets supply the right background illumination, maintaining the proper subdued mood.

If decorative lighting effects are what you want, the dining room is the place where you can really "go-to-town." One effective decorative method is to install a hidden strip of lumiline behind the drapery lambrequins on the windows. Part of the light is reflected to the ceiling and part to the floor, enhancing the window hangings and the general illumination of the room. A similar installation of hidden lumiline behind the valance of the door draperies or portiers, especially when the door is located directly opposite the windows, adds balance to the general effect.

(Above) A coffee-urn set and a sandwich toaster unit make buffet entertaining both easy and attractive. And the hostess doesn't have to spend all her time in the kitchen.

(Right) For candle-lighted occasions, the hidden strip of lumiline lamps, concealed under the drapery cornice, furnishes a subtle, pleasing glow to the room.

Trick Effects

Where a good many dinner parties are the general order of the week, changes in table lighting for various occasions are often desired. Unusual effects may be accomplished through the use of ceiling installations. Newest of these is the pin-hole type of lighting. Two one-and-a-half inch holes bored in the ceiling permit two tiny beams of light to project on the table, making possible a table decoration engagingly formal without being stiff and cold. The holes have to be drilled in the ceiling and the lamps and projectors must be installed and serviced from the floor above, in this type of installation.

Cooking Out of the Kitchen

Where there is no dining alcove or breakfast nook for lunch and breakfast, a dining room furnished with an eye to comfort and step saving for mother will have as bare essentials a coffee maker or percolator, a toaster, a sandwich grill or waffle iron, and an egg cooker for easy breakfast and lunch service. With these appliances handy, mother has an opportunity to keep her finger on the family pulse.

The dining room is also the scene of the buffet lunch and dinner—a type of entertaining which is growing more and more popular. Practically every table appliance on the market is adaptable to buffet service. Selection is more a matter of individual taste and preference keyed to the scope of the entertaining done. Some appliances suitable for this informal type of entertaining are the coffee maker or percolator. One automatic coffee maker now on the market lends itself admirably to this type of entertaining, for the thermostat flips the current on and off, keeping the coffee at the right drinking temperature for hours if necessary, without spoiling the flavor. A toaster, sandwich toaster or both in a hostess tray set and a waffle iron make self-service more of a lark. For hot dishes there is the buffet server, chafing dish, casserole and plate warmer. The roaster is also being pressed into service at these informal functions. For when hot foods are to be served the roaster with its large capacity and flexibility of interior arrangement makes it possible to have more than one hot dish to suit the various tastes of your guests.

Most of these appliances are so ornamental and streamlined in appearance that they can be placed on the buffet or closet shelves in full view when not in use—handy to the table when needed. And the hostess tray on its own little stand makes in itself a charming piece of dining room furniture.

DINING ALCOVE and BREAKFAST NOOK

CEILING fixtures and wall brackets are the proper lighting equipment for dining alcove or breakfast nook.

And where such a convenient alcove exists, breakfasts and lunches when only the family is present will, of course, be served here; and the coffee maker, toaster, grill, egg cooker and electric tea kettle will be used here to best advantage.

Most popular of simple entertaining units is the "hospitality tray" seen below.

(Below) An entire breakfast is prepared at the table.

BEDROOM

A member of the family can be called in the morning when one of these inter-communicating systems is installed. Below, an infra-red heat lamp gets at those aches and pains below the surface.

The home-maker can also use the inter-communicating system to give orders in the kitchen, or do any of a number of things that ordinarily would require a lot of steps.

This lumiline light on the closet door jamb automatically goes on when the door opens and lights the closet for easy inspection.

Lighting Your Way to Bed

THE bedroom is undoubtedly the "forgotten room" particularly from a good lighting standpoint. We find more evidence here than in any other room in the house that home lighting is still in the hobble-skirt era. It may sound like exaggeration, but the fact is that the average American bedroom is lighted by one small fixture in the ceiling with two or three bare bulbs and with no means of shading these bulbs to lessen the glare.

Semi-indirect fixtures are the most satisfactory for the bedroom, and in addition to the fixture, the room should provide adequate lighting for the face at the dressing table, comfortable and convenient lighting for reading in bed, and usually a lamp of the specification type for the comfortable chair or chaise. The end-table lamp is not recommended for bedside tables, but rather a tall lamp having two sockets and a fairly spreading shade.

The modern method of mirror lighting for a dressing table is to use two lumiline lamps on either side—spaced 30 inches apart wherever possible for best results.

Closets off bedrooms and halls, of course, should have lights that turn on and off automatically when the door is opened and closed.

For Extra Comfort and Health

A radio adds to the luxury of a bedroom; and an electric alarm clock to get you up in the morning is a necessity. If yours is a family of deep sleepers with no regard for alarms, have a timer installed on the radio which will turn on a program at the time set for in the morning. This method of being awakened to music should please even the worst morning grouch. An intercommunicating system installed at the bed is another electrical means of waking up the sound sleeper.

A sunlamp in the home is good health insurance. It pays for itself many times over in colds avoided by every member of the family, for a plentiful supply of ultra violet builds resistance against winter colds. Vitamin D, the sunshine vitamin produced by ultra violet light also insures sturdy bones, sound teeth and healthy bodies for growing children.

Another health appliance gaining favor in the home is the infra-red heat ray lamp. Entirely different in principle and use from the sunlamp, this lamp radiates warm infra-red rays which penetrate the skin and carry the heat by radiation deep down into the tissues, relieving nerve pressure (the cause of many aches and pains.) For sprained ankles, stiff necks, rheumatic and abdominal pains it has no equal.

The heating pad, long a favorite in many households, is more serviceable than ever. Non-radio-interfering thermostats and a 3-heat switch conveniently located close to the pad, make them indispensable and the latest gadget of all is the new electric blanket!

You can sleep in comfortable warmth now, regardless of the weather, with no other covering than this new light-weight comforter. It is ideal for sleeping porches and for invalids who find the weight of winter bed covering heavy and exhausting. A thermostat in a tiny control box, which is part of the blanket's equipment, keeps the bed temperature the same, no matter how the temperature in your bedroom may change.

If your bedroom windows open from the side swinging on a center rod, the electric window opener is another comfort you can enjoy.

GUEST-SEWING ROOM

A GUEST room which can be used as a combination upstairs sitting room-sewing room-or work shop, which I saw recently, has the intelligent arrangement of modern planning coupled with the modern trend toward intensive use of space.

When occupied by a guest, the room is beautifully modern with its comfortable bed, adjustable wall bracket bed lamp, roomy chest of drawers, chaise lounge, bridge lamp, and modern vanity dresser with a mirror top to reflect the lumiline flanked mirror on the wall.

What the unsuspecting guest does not know is that this very modernistic dresser has hidden talents. The mirrored top opens out to provide a large work table for cutting out dresses, sewing, working on drawings or plans. A door on the lower right side opens to reveal an electric sewing machine which can be swung out at a moment's notice and plugged into a handy outlet installed in the back of the compartment. A shelved compartment on the lower left, also wired with several outlets, holds an iron, a coffee maker, toaster or other appliance for preparing a quick snack. And there is plenty of room for coffee, sugar, several cups and saucers and other snack necessities.

The panelled side of a specially built book case opens downward to serve as a support for the folding iron board concealed behind it. And another handy outlet for plugging in the iron is handy to the ironing board. A portable typewriter slides out of the desk compartment and a concealed strip of lumiline under the shelves lights a compact practical desk. A flush ceiling light with a Holophane glass plate in the ceiling concentrates light on the entire work surface.

This double duty unit is a definite contribution to the trend toward compact, built-in furniture and intensive use of space.

Here's an attractive layout for a guest-room. Some of the equipment includes an iron, a sewing machine, a radio and clock and a coffee maker—all housed in a built-in double-duty dresser and bookcase.

Above is a simple arrangement of wall bracket lights for the bedroom. At the left, one of the newest electrical devices for the bedroom—a thermostatically-controlled electric blanket of light weight and even warmth.

BATHROOM

A BATHROOM to be modern must have, above all, a well-lighted mirror for shaving and applying cosmetics—two daily tasks that call for plenty of good light.

Two general types of lighting equipment serve this purpose: The popular eighteen-inch tubular 30-watt white lumiline Mazda on either side of the mirror, evenly lighting the face and shoulders of the various heights in the family; and the wall bracket fixture using 40 or 60 watt Mazdas. To insure the best results—when bracket fixtures are selected—the center of the lighted part of the bracket lamp should be placed about 5 feet 6 inches high, and wherever possible both types of mirror lights should have a space of 30 inches between them. A 7-watt night light plugged into an outlet saves many a stubbed toe and barked shin at night in the bathroom.

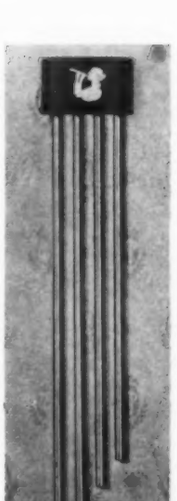
Plenty of outlets are the order of the day in the modern bathroom for the convenient use of bathroom appliances, such as the electric razor, vibrator, hair dryer, curling iron, cold cream patter, and, latest of all, the electric tooth brush. In some bathrooms there will also be found an electric reducing roller, resembling a rolling pin, which through the application of heat and vibration is said to literally slough off fat tissues.

A built-in wall type electric heater here, as in the nursery, is essential to insure real comfort.

Vitamin D, the sunshine vitamin, builds sturdy bones and sound teeth for growing children. It's not bad for adults, either.

A night-lite, along hall and stairs, burns for practically nothing and saves many a mis-step.

A built-in wall heater and well-lighted mirror modernizes the bathroom for comfort and beauty.



A melodious four-tone door chime will do away with doorbell nerves.

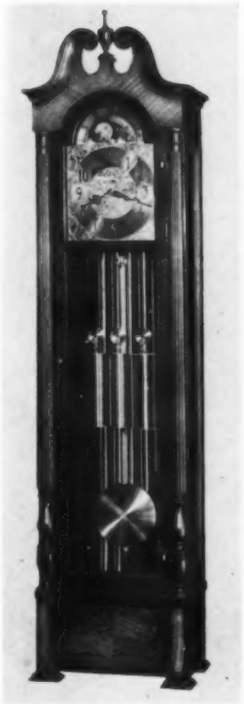
HALLS

A REALLY hospitable hall should be cheerfully lighted to greet the entering guest. In addition to an appropriate ceiling fixture, a well-lighted mirror will be appreciated by guests. Upper and lower hall fixtures carefully placed usually provide reasonable lighting for center hall open stairways. The upper hall fixture should center over the stairwell opening, while the lower one should be near enough to the bottom of the stairs to take care of illumination for the lower part of the stairs.

Basement and closed stairways, more hazardous to use, can be lighted by a reflecting hood over a 40 watt lamp placed on the side of the open floor at the top and bottom of the stairway. Another way of solving the dark stairway problem is to insert small shielded 7-watt lamps into a plug-in strip at intervals along the staircase. Little 7-watt night lights at the top and bottom of the stairway give sufficient illumination to prevent accidents in many instances.

The old-fashioned grandfather clock, long a symbol of American hospitality, is magnificently reproduced in electric models. True to the last detail of swinging pendulum, three weights, and Westminster chimes melodiously counting the quarter hours, these clocks give a modern hall an atmosphere of dignity and harmony.

Inexpensive wall bracket lamps help create a pleasant nursery atmosphere



The old grandfather clock has been modernized but the gracious lines have been retained.

And once this atmosphere is established, the old door-bell, with its piercing, nerve-wracking jangle, won't do at all. We must have an electric door chime for front and back door.

The door bell, front or back, has long been a nuisance and a time waster. For to find out who is ringing we must open the door, and frequently we are not quick enough in closing it for wily peddlers, expert in all the toe-in-door tricks, to gain entrance. Protection against these unwelcome door-bell ringers is now available through the use of an intercommunicating device which makes it possible to find out who is at the door without opening it. The inside instrument may be placed in the kitchen, hall or any other place most convenient to both front and rear door.

STUDY

INTERIOR decorators seem to favor the nautical motif for study rooms . . . perhaps because books like ships put you in touch with the four corners of the world. This nautical scheme can be carried out nicely in lighting a study, as the wall bracket and pin-it-up lamps have many interesting shades picturing ships at sea while others carry out the nautical motif with anchor or steering wheel decorations.

The tropical fish aquarium fits into this atmosphere of the sea and travel, and as a built-in aquarium showing through a port-hole opening in the wall, for instance, has definite decorative possibilities. And to complete this atmosphere of sea, travel and education there is the illuminated atlas which combines decorative value with fascinating educational and geographical information for the young and old alike.

NURSERY

MODERN lighting can exercise a powerful and beneficial influence on the lives of children by creating a pleasant, happy environment. An all-metal indirect fixture for general illumination usually proves most satisfactory for a child's room because it produces a glareless quality of lighting particularly desirable for young eyes in the development stage. Pin-it-ups, wall brackets and table lights may also be used for decorative effects.

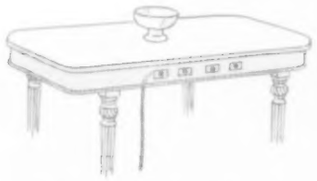
Vitamin D, supplied by ultra-violet rays, is so important to the growth and development of children that many nurseries have their own sunlamps, complete with automatic timer to prevent over-exposure.

A new device which serves as a burglar alarm is the two-way communicating system operating on radio principles. It may also be used as a check on restless and adventurous children who delight in getting out of bed on tours of exploration after they have been tucked in for the night. Mothers who cannot afford a nurse for their children welcome this means of freedom from worry.

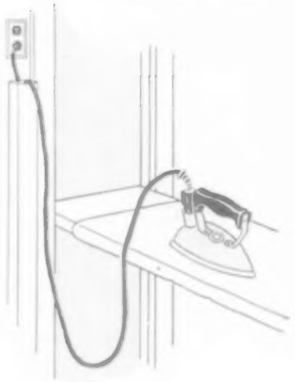
Here's another type of ultra-violet sunlamp which should be standard equipment in the home where there are growing children.

The latest nursery adjunct is a two-way communicating system which lets mother hear everything going on in the nursery.

The wall bracket lamp over the desk furnishes proper light for study; the modern ceiling fixture, and the bridge lamp behind the easy chair add balance to the general illumination of the room.

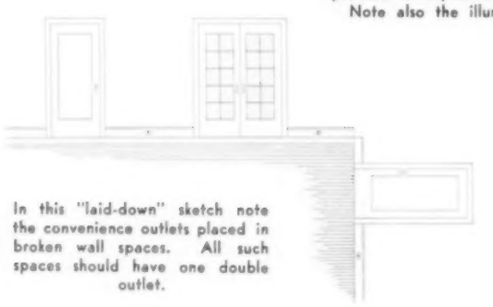


Dining and dinette tables are frequently wired for convenient use of table appliances.



A built-in raceway takes up the slack in the electric cord while ironing.

A built-in lighting unit over the front entrance provides a hospitable appearance to the house. Note also the illuminated house number.



In this "laid-down" sketch note the convenience outlets placed in broken wall spaces. All such spaces should have one double outlet.

ENTRANCES EXTERIORS and WIRING

ENTRANCES

GUESTS will appreciate a well lighted front entrance, and particularly an illuminated street number.

There are several methods of lighting the front entrance, simplest of which is the single lantern fixture suspended in the center of the alcove. Two lantern fixtures on either side of the front door is another simple and somewhat more satisfactory treatment. Strips of light concealed behind door panelling; and built-in flush ceiling lights over the door also add charm to a front entrance.

The right type of illuminated house number presents something of a problem. Size of numerals and spacing between them control their readability. Numbers stencilled on glass must have a low light to keep them readable. For instance, a four place number using numbers 2¾ in. high and 1¾ in. wide may be illuminated with from 7 to 10 watt lamps. Such a number is easily read from a distance of 75 to 100 feet. Where the distance is less, smaller numbers may be used.

Houses located on large plots of ground or in isolated neighborhoods require exterior light sources for general protective purposes. The best locations is under corner eaves. Pigeon cotes also serve to conceal these reflectors that become burglar lights at night.

An insect electrocutor lamp rids porches and terraces of pestiferous night flying insects; and the translucent globe projecting through the catch pan adds to the general porch illumination.

WIRING

MODERNIZING for more comfortable electrical living really starts with wiring. Houses more than five years old have only the barest skeleton of what an adequately wired home of today requires. And for this reason it is best to call in an electrical contractor who will see that your wiring system is installed according to the electrical code in your community. These codes deal primarily with wiring installation methods and materials, however. They do not cover the number or location of outlets, and do not necessarily guarantee a sufficient number of outlets or properly located switches for your particular electrical comfort and convenience. So, it is wise to have a fair working knowledge of what should be done to bring your wiring up to date.

First, ceiling and wall bracket outlets should be controlled by switches at entrance ways, thereby saving steps as well as electricity.

Two types of circuits—one for lighting and one for appliances will save a lot of grief over short circuits from overloading. Appliance circuits generally should be heavier than the ordinary house lighting circuits, because appliances draw more current.

Wiring plans should be elastic enough to provide enough convenience outlets to permit changing the furniture about when you get the urge. At least one double convenience outlet every 12 feet in unbroken wall spaces and one in shorter wall spaces, between openings, of 3 feet or more—is a good general rule to follow. If this does not seem enough for your needs then by all means increase the number of outlets, as a rewiring job should be done with an eye to the future needs as well as the present.

A convenience outlet on the wall near the door, about 4 feet up from the floor, in every room where a vacuum cleaner and floor polisher is to be used saves a lot of back bending.

Dining room and dinette tables are frequently wired with four or five outlets for handly appliance connection. A special circuit under the table in this case will prevent blowing fuses.

In the bedroom an extra switch near the bed controlling the ceiling fixture is handy in an emergency. Another novel wiring feature you might like in your bedroom is a timer

switch which will turn off the lights after you have gotten into bed.

Weather-proofed convenience outlets for porch lighting and appliances should not be forgotten.

A switch to control outside protective lights should be installed in the master bedroom; and a "burglar switch" which will turn on lights in certain important rooms and halls which cannot be controlled by regular switches until the burglar switch has been turned off, are two convenient protective features to have in the master bedroom.

Outside porch lights, house numbers and Christmas tree outlets, all should be controlled by a switch inside the front door.

For best results your appliances cords should be guarded against damage and fraying. A retrievable cord which permits the appliance cord to reel into a built-in receptacle now on the market is a neat way of taking for cords.

LOW COST LIGHTING

MODERNIZING the light in the home does not necessarily mean the outlay of a large sum of money for new lamps and fixtures. An average living room with fairly light wall paper can be well lighted with fixtures and floor lamps for average seeing needs with from 600 to 1200 watts.

Approved I.E.S. floor lamps with the three stages of lighting (100-200-300 watts) from one bulb sell for as little as $7; while junior floor lamps run from $5 up; and table lamps may be had for less than half that amount.

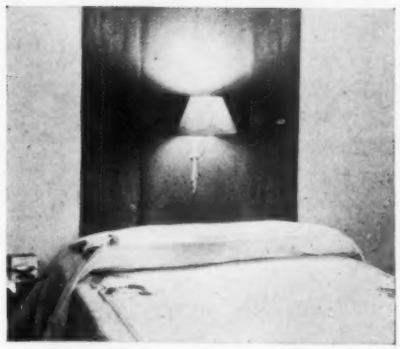
Adaptors complete and ready to screw into existing ceiling sockets, suitable for any room with white or light toned ceilings; enclosed globe adaptors for kitchen, bath, back hall or basement; parchment drums for multiple socket fixtures; parchment cones and cylinders for bedroom or hall; plastic bowls; lantern adaptors for drop chain installation over dinette tables, halls and bedrooms; silvered bowl lamp shaders for dining room or game tables; parchment, glass or plastic candle type wall bracket shaders—all available at low prices, help in replacing or fixing up existing ceiling and wall fixtures.

A good looking floor or table lamp that suits your room furnishings but that shines in your eyes when you look up from newspaper or book can also be modernized. The old socket can be replaced with a special socket to screw into the top of the lamp stem, the cord running through the stem of the lamp. A diffusing bowl fits on this new socket rim, and your present shade or a new one rests on the bowl, converting the lamp into a satisfactory glareless lamp.

An old bridge lamp that seems too valuable to give up can be modernized in several ways: A specially designed shade in parchment or silk for downturned bridge lamps screws into the present socket. Another specially designed shade that fits into present sockets has a white metal top and a lining to give high lighting results. This shade is intended to be used with a 100 watt silvered bowl lamp. For upturned bridge lamps a plastic diffuser can be fitted on the socket to soften the light and protect eyes from the bulb. And finally, a bridge lamp with a good sturdy base can be converted into a floor lamp by removing the bridge arm and installing a glass or plastic bowl and a new white-lined eighteen inch shade.

Decorative spots of light or color to add to the upward room lighting are made possible with the plastic urns in which bulbs from 25 to 100 watts can be used. Portable twelve and eighteen inch lumiline brackets are also available for mirror and shelf illumination from $4 up. Night lights of various types using 3½ and 7 watt lamps for outlets in the hall, bath, stairway and nursery run from twenty cents to a $1.

A junior floor lamp is a useful lighting tool for those occasional writing tasks where higher visibility is required.



A Better Sight—Better Light lamp for comfortable reading is a necessity (top photo). An over the bed light of the bracket variety.

A simple way of modernizing your overhead lighting fixture is to cover it with parchment drum.

Old table or bridge lamps may be converted into I. E. S. type lamps by adding a reflector bowl, new socket.

ADEQUATE LIGHTING at LOW COST

Cleaning..Dusting..De-Mothing

Cleaning draperies

Polishing floors

Getting at stair-runners

Dusting the books

Blowing radiator dirt

THE urge to clean and rearrange every room in the house bobs up in a woman's heart with the advent of spring. And cleaning, polishing, refurbishing and putting into good repair rugs, furniture, draperies and upholsteries is modernization in its simplest form —a form we can all indulge in with the aid of a good vacuum cleaner and floor polisher.

A new generation has sprung up since the vacuum cleaner first took the drudgery out of housecleaning. And today, if mother should ask her son to roll up the rugs, carry them out to the clothes line, and skin his knuckles beating them, the boy would think she had gone crazy. Beating rugs and carpets has become a thing of the past.

We are all sold on the vacuum cleaner as a necessary cleaning tool, and as a result you will find one in nearly half the homes in the country. What a good many fail to realize is that a cleaner cannot go on giving good cleaning results forever without an occasional check-up. It should be overhauled regularly and the worn parts replaced. This overhauling should be done by the original manufacturers' service representative. He will be in a position, also, to tell you when the cleaner has outlived its usefulness and should be replaced.

Eight years is a good average life for a vacuum cleaner. And yet four million homes throughout the country today are harboring cleaners anywhere from twelve to eighteen years old in various stages of disrepair. And some are still put through their paces on an average of twice a week, even though after each use the rugs are not much cleaner. A wheezing old horse is usually shot when he has outworn his usefulness. Not so the long suffering cleaner.

Selecting A New Cleaner

EVERY improvement modern engineering and skill can devise has been put into present day cleaners. Models suited to the particular needs of every home can be found in either the straight suction or motor driven brush types. Straight suction cleaners in floor or the cylindrical type, with the long tube applicator, are particularly adaptable to light housekeeping where there is plenty of polished floor surface and occasional rugs. The motor driven brush cleaner features triple action cleaning—beating, sweeping and suction—in which the rug is lifted to the nozzle where it is gently flexed, tapped or beaten to loosen deeply embedded grit; the brush gently sweeps; and the dirt and dust is drawn into the bag by powerful suction. This triple action raises the nap of the carpet and cleans so thoroughly that new life and color are restored.

A nozzle adjustment found on most cleaners today makes it possible to clean every thickness of rug from the very thinnest to the deepest pile, by a touch of the foot or by turning a screw. A self-regulator adjusts the nozzle automatically on some models; and an indicator bar on another shows when the nozzle is not properly adjusted or when the bag needs emptying.

The bag of a cleaner is important. A specially treated porous fabric is used which lets the air out, thereby increasing the suction, while the inside nap, also specially processed, traps and holds the dirt. For best results the bag should be roomy, easy to empty, with a wide opening, and it should be emptied after each cleaning. For when the dirt is packed down against the exhaust it cuts down the suction efficiency of the cleaner.

Other features found in modern cleaners are the electric head-light to illuminate dark corners and search out hidden dirt; two-speed motors—high and low, sealed-in motors and bearings that require no oiling; two oversized back wheels for easier cleaning of small rugs and to prevent tracking; rubber bumpers to protect the furniture; and easy-to-hold handles that tilt and lock in several positions for convenient cleaning under low furniture.

Cleaning the rug

A cleaner cord reel

Dusting hardwood floors

are all Electrical Functions . .

A special cleaner closet

Anyone who has experienced the inconvenience of keeping the cord out of the path of a cleaner will readily recognize the advantages of a built-in cord reel attachment for cleaner handles now on the market which reels out and takes up the cord as the cleaner is moved about the room.

Above the Floor Cleaning

THE vacuum cleaner does not stop at the floor coverings in saving backbreaking effort in housecleaning. Floor cleaners have attachments for dustless dusting of draperies, curtains, lamp shades and walls, and for difficult-to-get-at stair runners, automobile and furniture upholstery, and mattresses. For other hard-to-get-at places where suction tools cannot reach, there are blowing tools to remove dirt from radiators, backs of radios, piano keys, lamp shades and bookcases. Fluffing up pillows is another blower use which housewives should appreciate—a few threads opened in a pillow seam, enough to permit the blower end to be inserted, and in no time at all feathers packed down into a mass from long use are given new life and elasticity.

The hand type cleaner is also popular for above the floor cleaning. Several hand cleaners on the market incorporate the motor driven brush, which adds to their efficiency in reaching deeply embedded dirt in upholstered furniture, stair carpets, mattresses and winter overcoats.

De-Mothing

EVERY housewife is keenly aware of the ever lurking menace of the moth, and the devastating damage it does each year. Normal exposure to sun and air and good housekeeping usually is sufficient moth protection, but modern tendency to keep houses at summer temperature the year around increases the danger, as a warm house makes ideal living conditions for the moth. There are many substances harmful to moths and their larva, such as paradichlor-benzene, cedar oil and Larvex, but they are not as effective when applied by hand operated sprayers as when used in conjunction with the power sprayer on the modern vacuum cleaner. Attachments for spraying moth proofing liquids and crystals are found among the accessories of practically every cleaner—floor or hand.

Storage

THE cleaner is too important a piece of household equipment to be jammed into the kitchen broomcloset with other cleaning tools. Such treatment does not add to its efficiency and long life. The hall coat closet where the handle is constantly getting caught in coats or popping out to greet you as you open the door is not very satisfactory either. We think the cleaner and polisher deserve a special closet of their own. Lacking the space for such a cleaner closet, a roomy linen closet on the first floor, such as the one illustrated, is the next best answer.

Polishers

NO amount of money can give a home its full beauty and charm unless the floors furnish a harmonious background. And with the floor polishers now on the market there is no excuse for marred, scratched, ugly floors. These floor polishers apply wax uniformly on all types of flooring—oak, pine, maple, linoleum or tile—and with very little effort will maintain a hard, durable finish that will not show foot prints and that is not slippery. Scrubbing brushes, wire brushes for use with steel wool to remove old varnish or shellac; sanders, buffing pads and a waxing unit that distributes wax automatically are attachments found on some models.

Hand cleaner for mattress

Cleaning upholstery

Removing pillow dirt

Dusting wall spaces

Reaching embedded dirt

De-mothing clothes

With an electric roaster, a sandwich toaster and a coffee percolator you can serve an unlimited number of guests at a buffet party.

A complete breakfast—pancakes, bacon, eggs and coffee are prepared right at the table with a sandwich toaster and percolator.

Table Appliances

Electric table appliances are in a large measure responsible for the growing popularity of informal entertaining. These silent, tireless modern table appliances make for easier entertaining and happier hostesses. The question often arises, however, as to whether each appliance is doing full duty. Smart hostesses and home makers alert for new ideas may find some good pointers here for after the theatre snacks, Sunday night suppers and innumerable other and unpremeditated occasions.

Many delicious dishes can be fixed in a hurry with an electric waffle iron. The percolator is standard equipment.

Roasters

THE roaster need not be confined to the kitchen. It's far too versatile to be left languishing between meals. It adds to the gaiety of any party. At buffet parties, on the playroom snack bar, at porch and garden parties, in bungalows and trailers, a variety of delicious oven-cooked food, or hot hors d'oeuvres for the cocktail hour may be served.

The confirmed roaster booster insists on its picnic function. Cooked picnics are easy with the roaster. Wrap it up in an old blanket and take it along—the food keeps warm for six hours. Many dealers tell us of families who have tried this type picnic and found it such fun they are buying a second roaster—one for the children and one for the grown ups.

Cabbage and sauerkraut lovers no longer need to go hungry for their favorite dish because it smells up the house. A roaster plugged into a porch outlet cooks delicious corn beef and cabbage—and the house remains sweet and clean.

Porch cooking with the roaster is growing rapidly. Especially in that part of the country where the screened porch is as much a part of the house as the kitchen. Real kitchen comfort together with hot meals is possible when the family owns an electric roaster. A hot dinner can be cooked in the kitchen or on the porch in the roaster, and served on the porch from the roaster to a cool and contented family.

Waffle Irons

THERE are such people as waffle iron owners without imagination. In their homes the waffler spends most of its time on the shelf awaiting a rare waffle and syrup occasion. These people should learn the many other things this versatile appliance will do.

Always ready for a food S.O.S., the waffle iron will turn out the lightest omelet anyone could desire; the 1000-watt element found in many irons bakes tea biscuits, ginger bread, corn fritters, or doughnuts at the Sunday night supper table as rapidly as needed. Whole wheat, corn or rice waffles as a base for creamed dishes; or diced ham or bacon embedded in waffles make delicious main dishes for impromptu affairs. Many delicious desserts are also possible with the aid of a waffle iron.

Round or square, single or double—waffle irons lend a decorative note to any table.

Toasters

ONE of the first electrical appliances to promote hospitality in the home, the toaster remains the foundation of electrical entertaining. Whether it is a cocktail party, afternoon tea, buffet supper, bridge or children's party, the toaster tray set with its array of tempting fillings and spreads for sandwiches and canapes dominates the table.

A toaster also makes possible such delicacies as melba toast, cinnamon toast, cheese sticks, croutons to garnish soup, and toast shells to hold creamed egg, meat or vegetable dishes. Many puddings also use toast as a basic ingredient.

Coffee-Makers

A HOSTESS stands or falls by her coffee. Delicious full-flavored coffee can be brewed in the electric glass drip or percolator type coffee makers. For continuous service at just the right temperature a heat-control in the plug of one coffee maker now makes it possible to brew coffee at high heat and then keep it at the right serving temperature for an indefinite period on low heat.

Smart glass coffee maker sets with heat-

Creamed and steamed dishes are a natural for the electric casserole—and the kids love food fixed this way.

The modern glass coffee makers keep the hostess out of the kitchen during informal entertaining.

es Lead Double Life

treated glassware cups, saucers and plates; and handsome urn sets in a wide selection of sizes and designs are available.

The wide-mouthed bottom bowl of one glass coffee maker is being utilized by many homemakers to brew tea, cocoa and to heat soup. The fast cooking electric stoves may also be pressed into service in the nursery to warm bottles or heat the milk.

Coffee made the electrical way also enriches the flavor of coffee desserts such as coffee ice cream and coffee cream pie.

Casserole

THE casserole is a junior edition of the electric roaster—you can't prepare a meal as diversified as the roaster accommodates, but it has many of the same uses.

A casserole is the ideal device for creamed chicken, soups, stews, scalloped dishes, and almost waterless cooking of leafy vegetables. It is also popular for carrying hot dishes on picnics.

Children are as electrical appliance conscious as their grown-ups and they enjoy nothing better than a casserole cooked meal.

Simple dishes, such as baked potatoes, baked beans, sauerkraut and pork chops, chop suey and all sorts of puddings, are delicious when cooked en-casserole. Casseroles are automatic, of course, and thermostatically controlled to maintain even temperature.

Sandwich Toaster

THE whole emphasis on modern dining for the small family and informal entertaining is on convenience and ease in preparation of food. And the sandwich toaster more than any other appliance fits that description.

In addition to the delectable toasted cheese sandwich, the sandwich toaster will grill hamburgers, tomatoes, sausages; shrimps, apple rings or eggplants; make griddle cakes, french toast, and delicious canapes; and with waffle grid attachments a sandwich toaster performs all the functions of a waffle iron.

A bacon and egg sandwich is a special delicacy when prepared the sandwich toaster way—spread slices of cooked bacon over the first piece of bread, cut out a round hole about one and a half inches in diameter in the center of the top slice and drop the egg into this hole, close the grids and toast—the white firmly seals and holds the slices of bread together so that the sandwich can be carried to a picnic or put into a lunch box.

Chafing Dishes

CHAFING dishes provide a graceful and convenient means for cooking at the table food which usually requires a double boiler, such as rarebits, chicken-a-la-king, creamed lobster, game dishes, and special sauces.

And for serve-yourself breakfasts, the chafing dish is ideal for cooking and serving cereals, creamed eggs and creamed chipped beef.

Buffet Food Server

FOOD can be prepared in advance and served two or three hours later without bother or delay with the aid of an electric food server. No matter how large the party to be served, every guest receives food at its exact best, and late arrivals offer no problem. This is an ideal appliance for Sunday breakfasts and other meals where schedules are irregular.

With the current disconnected, and the water container packed with cracked ice, the buffet server will also keep salads and fruits properly chilled for a long time.

Roasters are versatile. You can cook food at home and pack it off to a picnic without taking it from the roaster. This one is loaded with grilled frankfurters and rolls.

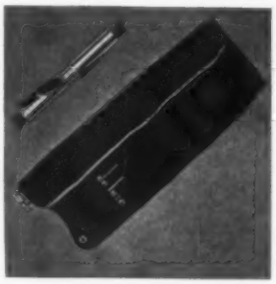
TEN WEEKS LEFT

to Cash in on the Big

$92,340 WESTINGHOUSE CRISCO CONTEST

Literally millions of women are now reading and hearing about Westinghouse Vacuum Cleaners . . . the only merchandise prizes offered in the big Crisco Contest. Magazines, newspapers, radio and entry blanks — all are prominently featuring the "Save $12" buy-now offer — which turns contest entrants into immediate prospects for Westinghouse Vacuum Cleaner dealers. This offer is good until June 30th, 1938. There are still 10 weeks left to cash in on this smashing promotion. Don't miss this spring's biggest profit opportunity. Use the coupon to send for full information now.

THIS BUY-NOW OFFER FEATURED BY "VIC AND SADE" . . . Crisco's top-ranking radio team. It also appears in every magazine ad, and on millions of entry blanks.



FREE! DEMONSTRATION KIT

To help you demonstrate and sell, with every order for two RD-3 cleaners and two RDT attachment sets, one extra Deluxe Cleaner bag and one extra De luxe Cleaner brush roll will be furnished FREE . . . for demonstration use.

RUSH COUPON TODAY

For Full Information

Millions of homemakers have certificates to redeem. The best selling weeks are ahead.

Westinghouse Electric & Mfg. Co.
Appliance Dept. 8265, Merchandising Division
Mansfield, Ohio

I want to sell Westinghouse Vacuum Cleaners and share in the profits of the Westinghouse-Crisco $92,340 contest, and six week's advertising campaign. Please rush full information on offer checked.

☐ OFFER "A"
RDA-3 Westinghouse Cleaning Ensemble, consisting of one (1) RD-3 Cleaner and one (1) RDT attachment set.

☐ OFFER "B"
SPECIAL DEMONSTRATION DEAL — Two (2) RD-3 Westinghouse Cleaners and Two (2) RDT attachment sets. Extra De luxe Cleaner bag and brush roll FREE.

Full-color Display and Literature included free with each order.

☐ Check this square if no Westinghouse representative now contacts you.

Name .....

Address ..... State .....

City ..... ☐ Electric Roaster Promotion

Send me gratis, details about ☐ Special $1 For Old Iron Offer
☐ "Hushed Coolness" 1938 Westinghouse Fan Program.

EVERY HOUSE NEEDS **Westinghouse**

WESTINGHOUSE ELECTRIC

"The Fan That Folds"

McKay
UTILITY FAN

$4.75 with 110-volt A.C. motor

NEW TYPE FAN OF MANY USES

YEAR 'ROUND SERVICE

Handiest ever for cooling breezes wherever wanted, for removing kitchen odors or bringing in fresh air, for ventilating, for circulating warm air from radiators, for drying hair, etc. FOLDING BASE—conveniently hangs, stands or folds where needed. Soft rubber feet prevent creeping. Folds compactly, carries easily in suitcase. Duveteen bag furnished with each fan.

It Sells Itself

Counter display card with pocket containing supply of circulars hangs on frame of fan. Invites prospects to sell themselves. Furnished free to dealers with order for fans.

FOR TRAILERS, CABINS, RESORTS, FARM HOMES
—Made with 6 volt D.C. motor (at $3.95), 12 and 32 volt D.C. motors (at $4.95).

BIG CAPACITY
—Smooth, quiet, powerful motor—cool running. Delivers more air than average 10-inch fan. 8-inch propeller-type blade concentrates and directs air delivery where wanted. Tested and proved.

JOBBERS -- DEALERS
—The unique features and many uses of the McKay Utility Fan will give you volume sales and worth-while profits. Makes an instant hit. Send sample order today.

LYDON-BRICHER MFG. CO.
Manufacturers of Electric Fans and Motors since 1933
2496 UNIVERSITY AVENUE, ST. PAUL, MINNESOTA

NEW Profitable Item Wins Wide Acceptance!

DOOR-A-PHONE

A Door Telephone — A protection every home will have — Guards against undesirable entry and offers a convenience no other appliance can duplicate. Compact, easy to install, simple in operation, and consumes no current when not being used.

Feature Dor-A-Fone for 1938. Write TODAY for particulars.

Door Unit Inside Unit

SETCHELL CARLSON, Inc.
2233 UNIVERSITY AVE., ST. PAUL, MINN.

The forethoughtful electrical appliance retailer checks the progress of his own business with that of the electrical appliance industry as a whole—as reported monthly in ELECTRICAL MERCHANDISING.

Yes—and he scans the advertising pages of ELECTRICAL MERCHANDISING for news of the timely, "salable" merchandise that he knows will help him increase sales—and *profits*.

Here Comes the K-M Caravan

to Show You the Wonderful New 1938 K-M FANS!

The big fleet of K-M DeLuxe Trailers traveled 175,000 miles last year—covered 41 states—visited 3500 jobbers and Dealers! Look for one of these K-M Trailers in *your* territory—it's full of money-making ideas for *you! JOBBERS:* Write us for full details of how this Caravan can help you.

K-M ELECTRICAL APPLIANCES

KNAPP-MONARCH CO., St. Louis, U.S.A.

AIR CONDITIONING

● Any approach to the business of modernizing old homes with air conditioning equipment must first take into account the number of those old homes, their age and condition and the type of heating system at present installed. So let's look at some quick figures: Of about 25,000,000 non-farm families in this country, 47 per cent are home owners—11,760,000 families; nearly 80 per cent of these families live in one-family houses which makes 9,500,000 families—the big market for modernizing.

● The Real Property Inventory established that 42.4 per cent of these houses used only simple stoves as heating equipment; 50.5 per cent had some form of central heating and 7.1 per cent were an unknown quantity as far as any form of heating was concerned. It also established that 16 per cent, or close to 1,500,000 of these houses needed some kind of rehabilitation or modernizing.

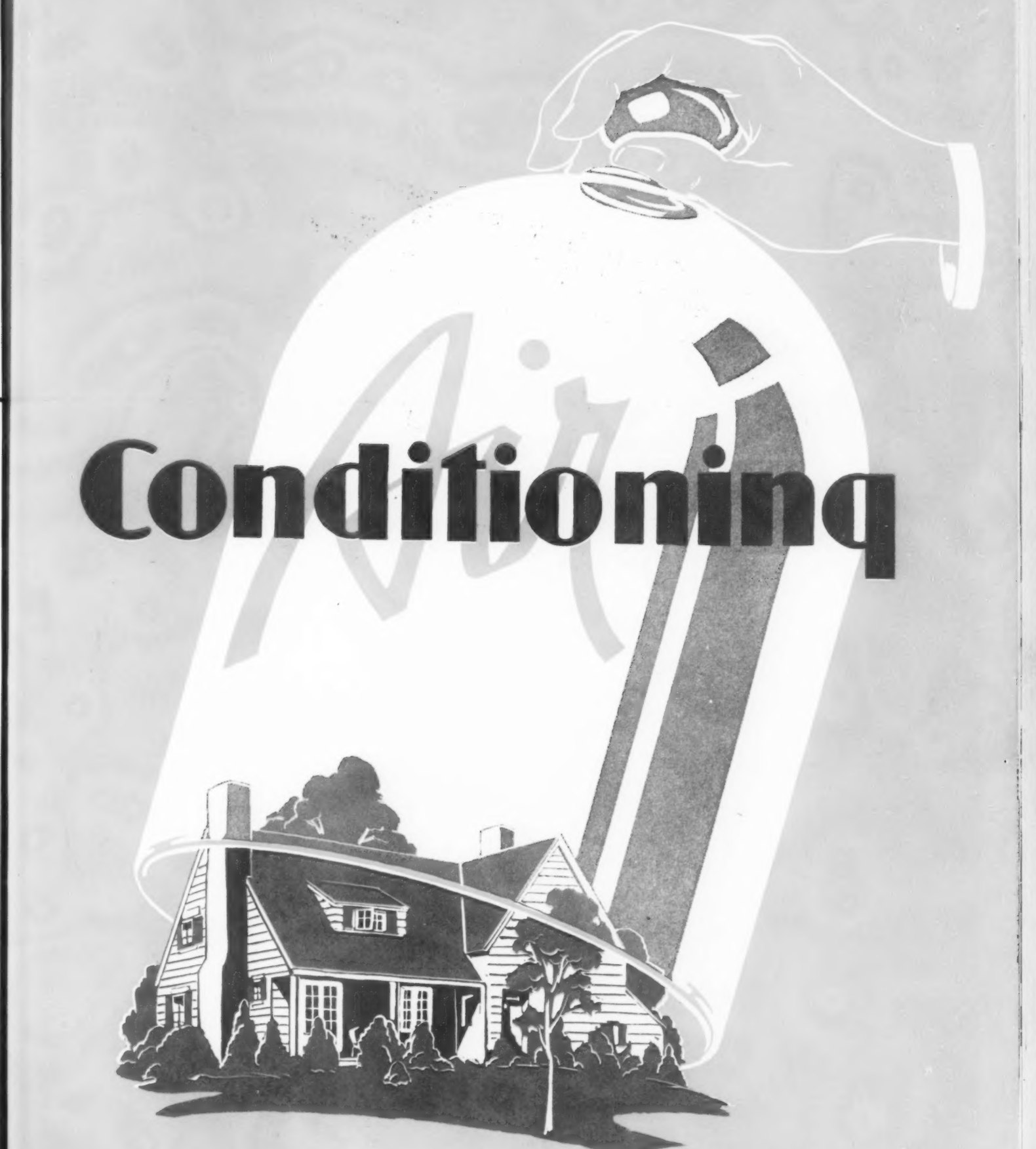
● Now, of the 50.5 per cent of these houses that already had some form of central heating installed, 30.1 per cent had gravity warm-air systems; 12.0 were equipped with steam-vapor systems and 7.4 per cent had hot-water systems. The largest percentage enjoying some form of central heating, therefore, had the simplest type of system—gravity warm-air—for conversion to air conditioning. These are the houses already equipped with ducts.

● The other two classifications lend themselves to auxiliary air conditioning systems, split systems, radiator conversion to air conditioner units for winter conditioning, room cooling and attic fan ventilation systems. The latter two, of course, are applicable to any types of existing homes.

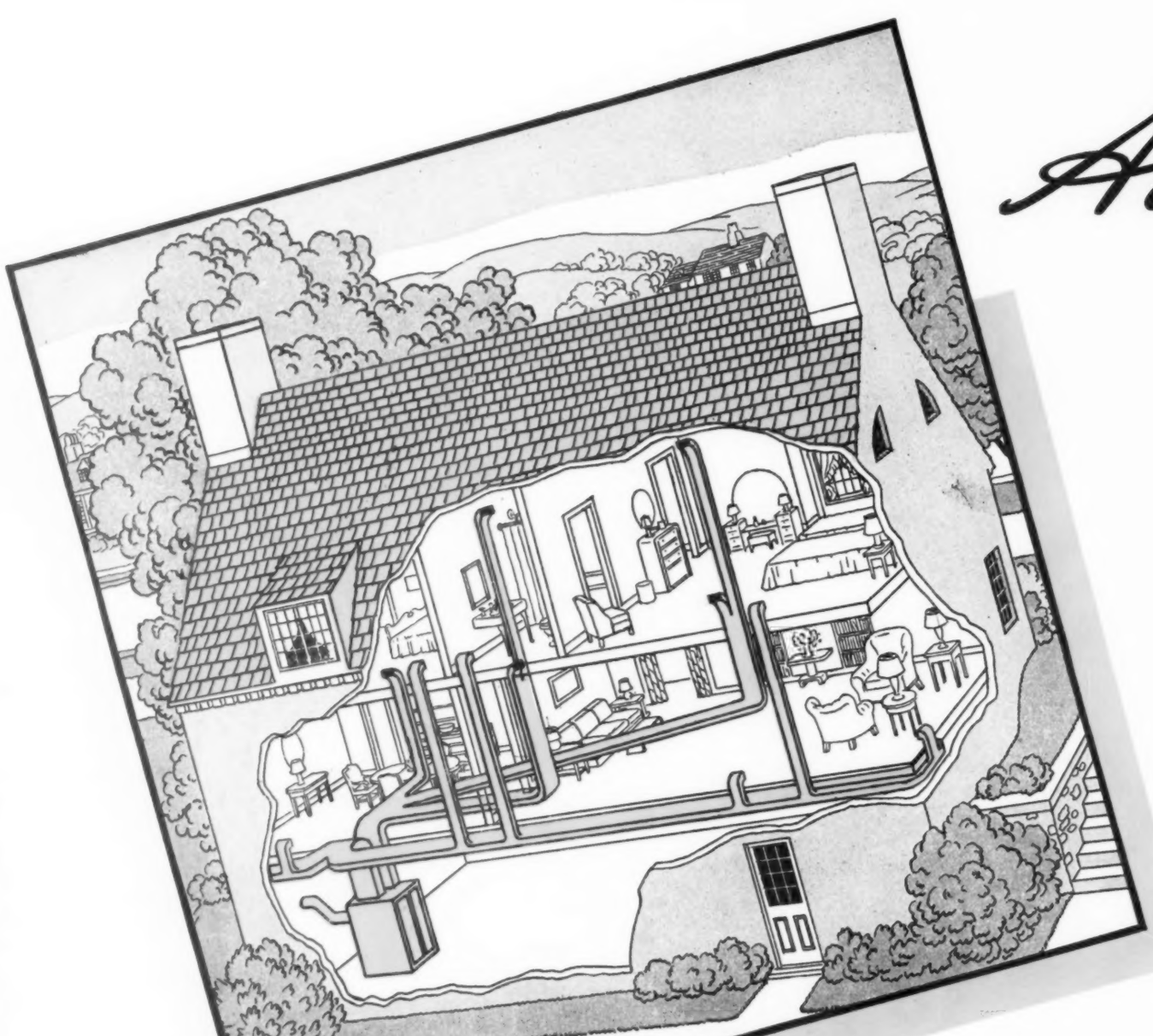
● There is the market.

● It is an impressive picture any way you look at it. And air conditioning of the built-in, permanent type of modernization, is eligible for Federal Housing Administration loans, guaranteed up to 90 per cent of the total cost of the modernizing job and extending for a period of 20 years.

● On the following pages are details of application of the varying types of air conditioning equipment on the market to meet specific installation requirements.


Air
Conditioning

Air C



By LAURENCE WRAY

A central, year-round air conditioning system of the direct-fired, warm air type employs a duct system such as shown in this illustration. In winter, the air is heated, humidified, cleaned and circulated through the ducts; in the summer, it is cooled, de-humidified, cleaned and circulated. A similar system is employed for winter air conditioning where no provision has yet been made for summer cooling.

THE most popular form that electrical modernization takes today has to do with the renovation of the heating system. In those houses boasting some kind of central heating system, the old boiler is having its face lifted in a big way. In many cases it is being sent along to the junk yard with the ash-cans, shovels and other debris which automatic heating outmodes.

This is a good sign. Because the first approach to any kind of air conditioning in the home makes it imperative that some form of automatically controlled heat be installed.

There are those who will argue the comparative merits of automatic stoker-fired coal heating; there are others who prefer oil as a fuel whether the old boiler be converted with a simple oil-burning unit or be replaced with a complete boiler-burner unit especially designed for the economical and efficient burning of the fuel; still others insist that gas makes the best fuel. It is largely a matter of personal preference, skillful advertising of competitive products, and geographic location which determines the kind of automatic heating installed.

The main thing is that it be installed. Air conditioning has, as its primary function, the business of controlling the temperature of the air. Given a device which controls it automatically in the winter, you have a good start. As a matter of fact, with the addition of a

Conditioning is MODERNIZING too

blower or fan to force the air through the house at a given pressure, provision for adding moisture to the air and a filter to clean it before entering the ducts, you have a winter air conditioning system. This is predicated, of course, on your heating system being of the direct-fired, warm air type which circulates through ducts. A different set of conditions is necessary where a radiator system is already installed or where hot water or steam is used as the heating agent.

The Home-Owners Approach

BEFORE going into these various problems which will be found outlined in more detail further on, let's stop and consider the status of this air conditioning business from the standpoint of the average home-owner.

We may as well admit, to begin with, that little or no effort or money has been spent by the average home-owner in introducing air conditioning. There has been some impetus in this direction where new home building is concerned. Here the problem is a simpler one because the architect and the builder can more economically include provisions for air conditioning in the original plans. But, with the exception of those people to whom $1,000 or $1,500 is not a lot of money public apathy about residential air conditioning has been of considerable proportions.

Why?

Well, lack of education, for one thing. Your average man or woman has had a good taste of air conditioning in public places—movies, department stores, restaurants, trains, hotels, bars and the like—but he is still relatively unaware that similar benefits might be installed in his own home. For another, a belief that even if the equipment were available that its cost and upkeep would eat him out of house and home. A third and very good reason is a natural confusion that exists in his mind as to just what air conditioning is, anyway. So many claims have been made for various kinds of equipment that this is not to be wondered at. However, the industry is now well agreed on a definition of true, year-round air conditioning that confusion from this quarter should not be a cause for concern.

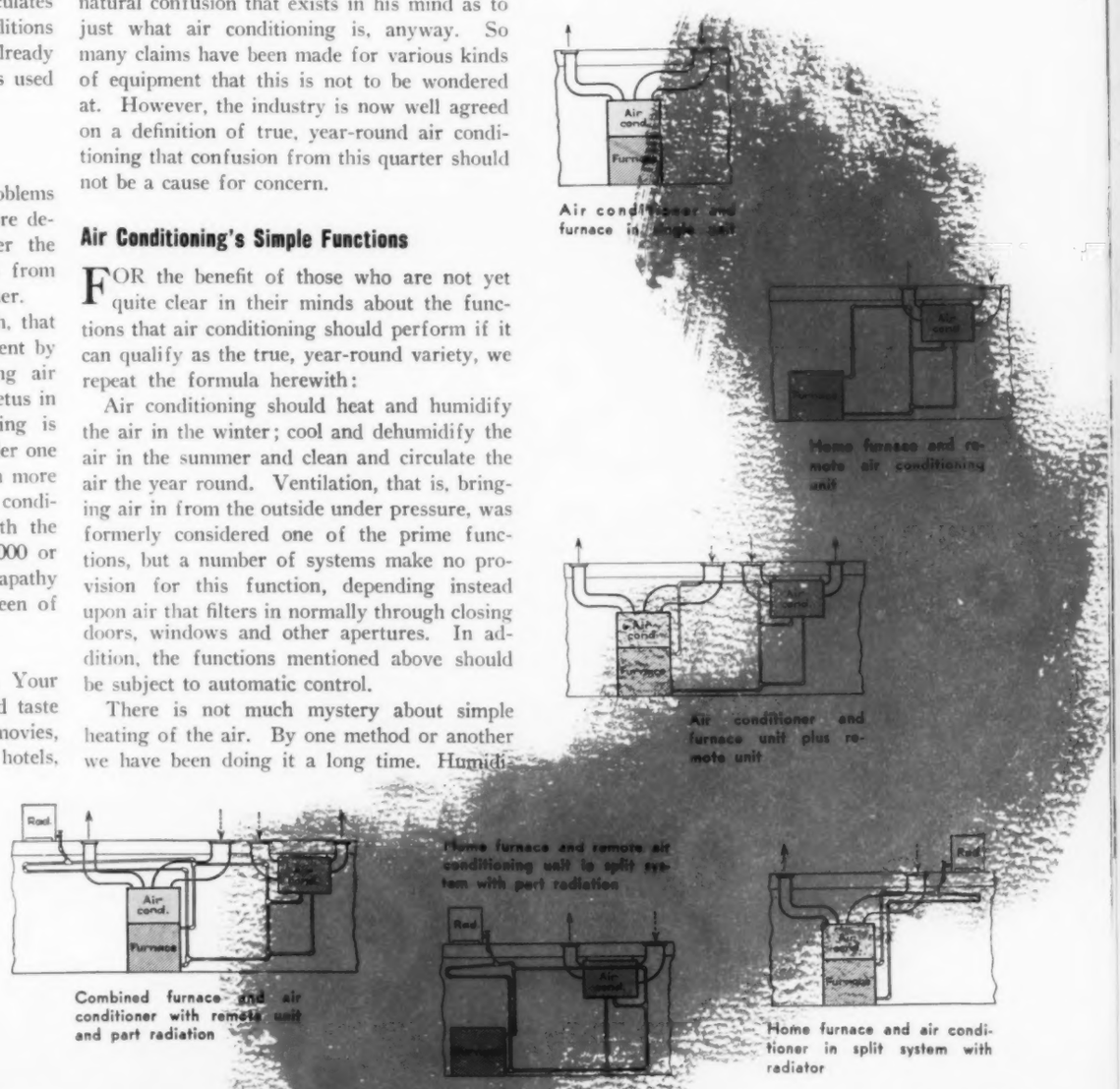
Air Conditioning's Simple Functions

FOR the benefit of those who are not yet quite clear in their minds about the functions that air conditioning should perform if it can qualify as the true, year-round variety, we repeat the formula herewith:

Air conditioning should heat and humidify the air in the winter; cool and dehumidify the air in the summer and clean and circulate the air the year round. Ventilation, that is, bringing air in from the outside under pressure, was formerly considered one of the prime functions, but a number of systems make no provision for this function, depending instead upon air that filters in normally through closing doors, windows and other apertures. In addition, the functions mentioned above should be subject to automatic control.

There is not much mystery about simple heating of the air. By one method or another we have been doing it a long time. Humidi-

TYPICAL APPLICATIONS


Air cond.
Furnace
Air conditioner and furnace in single unit
Home furnace and remote air conditioning unit
Air conditioner and furnace unit plus remote unit
Rad.
Air cond.
Furnace
Combined furnace and air conditioner with remote unit and part radiation
Home furnace and remote air conditioning unit in split system with part radiation
Home furnace and air conditioner in split system with radiator

The coal stoker shown here is designed to burn soft coal. Two of three models are designed to serve residences using not over 18 tons of coal annually. Automatic air controls provide increased combustion efficiency. Temperatures are maintained with thermostatic control. (Frigidaire)

Another type of automatic coal stoker is pictured here (Whiting). Temperatures are regulated automatically and the unit requires attention once a day at the most—when the hopper is filled and when clinkers are removed. This latter process may only have to be repeated at rarer intervals.

fying, is not quite so well understood. It consists simply of replacing the moisture back into the air which the heating process has withdrawn. Humidity, in proper relative proportions is important to health. And so humidifying should be an auxiliary of the heating function. Cleaning the air is also important from a health standpoint to say nothing of its advantages in cutting down the house-wife's daily cleaning job. Circulating the air guarantees that the treated air will be evenly distributed throughout the whole room area. Without some method of keeping air in circulation, it would form in stagnant layers or blankets, the cooler settling near the floor and the warmer rising to the ceiling.

These are the things that winter air conditioning performs. There is just as little mystery about the cooling of air. By means of a chemical refrigerant in a cooling coil, the unusual amount of moisture or humidity present in the air during the summer months is condensed. The air is thus made dryer. This dry air, passing over the cooling coils is filtered and circulated throughout the area.

Achieving the Simple Functions

IT might be said right here that only a central air conditioning system, properly installed, will provide all these functions in the home—*for the entire house*. But it is possible to achieve all the functions with a combination of equipment for various portions of the house. For instance, you can have a winter air conditioning system, operating from the central heating system which performs the functions of heating, humidifying, cleaning and circulating the air; and for summer you can install a portable room cooler which performs the functions of cooling, dehumidifying and circulating the air in a single room. Another way of going about it would be to have a winter air conditioning system and a cooling unit, installed in the basement which would take care of the lower floor or any particular room it was felt necessary to cool in the summer.

There are many and diverse ways of attacking the problem. For the man whose heating system is of the warm air, direct-fired type, it would be cheaper and more efficient to start with the central system and add the other functions to give him winter air conditioning. At a later date, at his own discretion, he could provide for summer cooling and de-humidification.

The man who has a radiator system in the house can provide for air conditioning a portion of the house with a split system; can substitute his present heating radiators with air conditioning radiators—that is, radiators which provide for heating, humidifying and circulating the air, or can provide for individual room cooling in the summer months. He can also install an auxiliary air conditioning system—so called because it functions entirely apart from the radiator heating system.

Everything depends, of course, on what particular function of air conditioning the homeowner feels that he must have. He may already have equipped his boiler, for instance, with a conversion oil burner or an automatic coal stoker and feel that his most immediate requirement is to find some means of adding moisture to the dry, warm air. In the average

MAKING THE HEATING SY

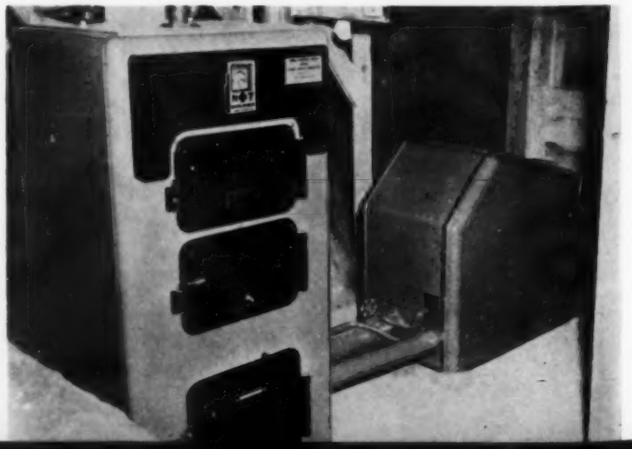
If the old boiler is being replaced entirely, a unit such as the one pictured here, specially designed and built to burn oil may be installed. This is the next step beyond the simple conversion of the unit with an oil burner installed in the present boiler. Units such as this are also made to burn gas. (York)

WE said in the introduction to this section on air conditioning that the most popular form of electrical modernization was the renovation of the heating system. In existing houses, already equipped with some form of hand-fired central heating, this renovation usually takes the form of making the system automatic in feeding and control.

Whether the system is warm air, hot water, steam or vapor it is susceptible to this simple form of modernization. It may take the form of conversion oil burning which utilizes the existing boiler, adds a specially-designed grate and employs one of the many gun-type or rotary type conversion oil burners. To go a step further, it may take the form of replacing the old boiler entirely and installing a boiler-

If you are going to modernize your heating system and the present boiler in the house is inadequate (most of them are) you can choose between a number of units designed to burn different fuels.

The simplest way to go about it is to determine which fuel is the cheapest to burn in your particular locality. If it is coal, the unit such as the one described here and in the picture will fill your requirements. It is a boiler (American Radiator) designed to give maximum efficiency in connection with an automatic coal stoker. This is an actual installation photograph from a home in Birmingham, Ala.



house this can be done by adding a humidifier unit to the central system, if it is the duct, warm-air type; or, a different form of humidifier is available which is placed in the room, over the radiator. Other humidifiers are encased in cabinets of their own much like a room cooling unit.

On the other hand, with the heating problem solved, the home-owner might feel that some form of summer cooling is what he wants. Again, if he has direct-fired warm air heat, circulated through ducts, the same system can be pressed into service to circulate cool, dehumidified air in the summer through the agency of a compressor unit installed in the basement.

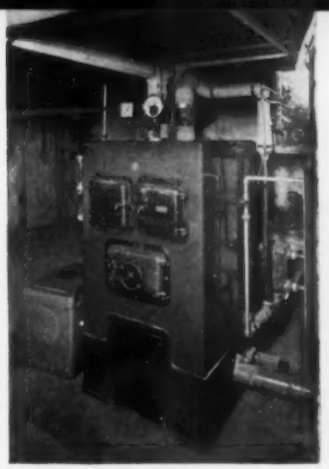
If he has a radiator system employing steam or hot water, auxiliary air conditioning can be provided by a unit which may be placed near the heat generator. This unit is good for both winter and summer air conditioning. It comprises a filter, blower and heating coil for winter conditioning and a cooling coil can be inserted for summer conditioning. The cooling coil, in this case, may be either water or refrigerant cooled. Ducts from the unit may be suspended from the basement ceiling and will thus provide summer cooling for the lower portion of the house. The whole problem here, where radiators provide the heating in the winter season, is the cost of running ducts up through the house after it is built. Sometimes this can be done at reasonable cost but as a general rule it involves pretty extensive alterations which run into money. It is not hard to see, however, that ducts suspended from the basement ceiling can be cut through into the lower floors of the house and provide both winter and summer air conditioning in that area at little cost for alterations.

In summer cooling, it is accepted practice to locate the outlet or grill where the cool air is circulated into the room, at or near the ceiling. Here again there would be the problem of running the ducts up the walls. This may be gotten around, by locating the grilles near the floor and employing deflector-type registers.

Room Coolers and Attic Fans

APART from the methods outlined above, the home-owner can always achieve summer air conditioning through the use of individual, self-contained room coolers. These units consist of a compressor, cooling coils, fan for circulating the air and filter for cleaning it, all housed in one smart cabinet that may be moved from place to place. Room coolers are either water-cooled in which case they require a connection to the plumbing system; or air cooled which necessitates connection to an outside window.

For even less money, if comfort cooling in the summer is the main object, he can install an attic ventilating fan. There is no primary function of air conditioning proper involved here except movement of air or circulation. The attic fan unit utilizes the cool night air to draw off heat stored in the attic during the hot daytime hours. Designed to provide a minimum of two air changes a minute on the upper floors of the house where the bedrooms are located, it accomplishes a gentle movement of the air through the rooms and into the attic where it is exhausted outside again.



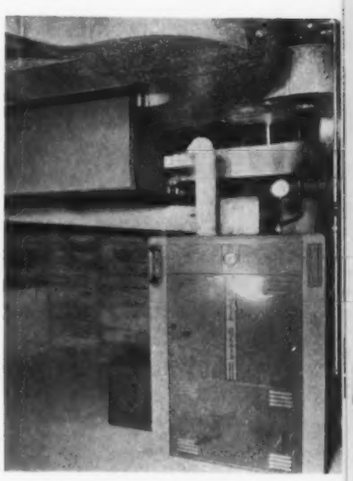
In the illustration we see one of the simplest methods of beginning air conditioning in an old home: equipping the boiler with an automatic coal stoker. The addition of a blower or fan to circulate the air throughout the house and humidifying unit would make this a winter air conditioning system.

Automatic control of temperature is gained in either the warm air furnace or the hot water or steam type of system. Once the hopper is filled with coal, it is fed to the bottom part of the fire at a rate depending on the amount of heat required from the thermostat. (Crane)

G SYSTEM AUTOMATIC

burner unit designed for the more efficient and economical consumption of oil or gas. These units, being factory made from start to finish and requiring only connection to the duct or radiator system of the house, are properly insulated and fitted for the express job of creating and conducting heat. In more recent types they are also equipped with filters and blowers to clean and circulate the air thus making them winter air conditioning systems.

Another simple form of heating system modernization requires the addition of an automatic coal stoker for the efficient and trouble-free burning of coal—whether bituminous or anthracite. These stokers feed the furnace a pre-determined amount of coal and burn it so efficiently that only a clean clinker is left for removal. Ashes are reduced to a minimum.



Here is an installation in which an automatic coal stoker (Iron Fireman) serves a steam boiler. Steam goes from the boiler to the air conditioning unit, suspended above (Carrier) which is equipped with a heat exchanger. This transforms the steam into warm air which is circulated throughout the house through the duct system which may be also seen in the photo.

The photo at left shows a typical, old-fashioned basement, a typical, old-fashioned boiler and a fairly typical old couple. Here is no fancy ping-pong, bar and rumpus room. And yet the basement has been made into a livable place—an extra room in the house.

This might be called the first step in any air conditioning system. It merely involves converting the old boiler into an automatic heating unit. This one happens to be an oil heating unit (Master-Kraft) of which thousands are sold every year and thousands of people are learning that carrying out ashes is the only really old-fashioned way.

Summer C

Frigidaire In an air-cooled type here illustrated, the direction of the cooled and de-humidified air may be changed at will (that is, in a circular motion directed to any corner or part of the room) it is thermostatically controlled which means that whatever temperature setting you turn it to, the unit will operate until that temperature is reached and then shut itself off temporarily until it is necessary by heightening temperature to go into operation again; and the air is both cleaned and ventilated. This particular unit, unlike some others on the market, does not bring fresh air in from the outside and re-circulate it in the room, but draws air from the room and from interior of the house and cools it. In this way, the operating cost of the unit is cut down considerably there being no continual influx of new air to be treated.

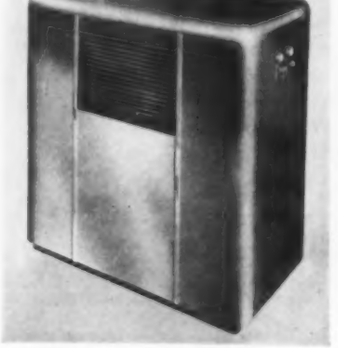
AND now we come to a consideration of the portable, self-contained room cooler which has as its functions the cooling, de-humidifying, cleaning and circulating of the air in a defined space. Here, perhaps, more than in any other small air conditioning device is the average man's "natural." And for the simple reason that it does a thorough, bang-up job of cooling. It gives him what he has been taught and led to expect from air conditioning in a single package.

In the years to come, it is not too much to expect that the room cooler will become as common and accepted a device as the household electric refrigerator. Outside of a central air conditioning system, certainly, or the simple air *circulating* properties of an attic ventilating fan, there is no other efficient approach to true cooling and de-humidification.

There is nothing inherently new in the component parts of a room cooler. The compressor, cooling coils, fan, filter belt and motor are all well-known and widely used devices. It is their combination in a compact, trimly-designed package which makes the room cooler the efficient device it has become.

Room coolers fall into two definite classifications—water-cooled and air-cooled. The air-cooled type is of comparatively recent development and was designed for cheapness of operation and ease of installation. The water-cooled type requires attachment to the plumbing system of the house as the consumption of water is fairly heavy. The air-cooled type requires

Universal Cooler This unit cleans, cools, de-humidifies and circulates air. It is equipped with a ¾-horse-power water cooled compressor and has a capacity of 9,000 B.t.u's per hour. Three pipe connections install it and it sells for $300. Note resemblance to radio cabinet.



Herman Nelson This is a water-cooled type of unit room cooler which cools, de-humidifies, cleans and circulates the air. It provides ¾-ton cooling capacity with 9,000 B.t.u. per hour rating. It has an automatic thermostat for choice of degree in cooling and is entirely automatic and self-contained.

Corozone This air-cooled room conditioner for summer cooling performs all the functions of the room cooler and in addition has a deodorizer unit for purifying the air. It is available in ¾ and 1½ ton capacities the former of which has 10,000 B.t.u. cooling.

U. S. Air Co. Portable, room conditioner which filters incoming air, cools it by the evaporative process and circulates it through the room. Performs the humidification, cleaning and circulating function in winter.

Cooling

FOR A SINGLE ROOM . .

installation next to a window with a tight fitting between the unit and the window sash. In size these units are not much larger than the average radio cabinet and are designed to harmonize with any decorative furnishings.

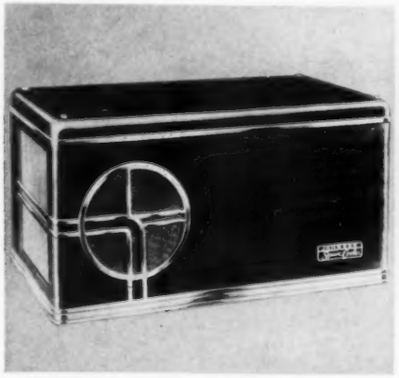
In most cases, one-half to three-quarter horse-power motors are employed necessitating a special wiring connection. Some units are designed with a smaller capacity and may be plugged into the existing circuit. It may be said generally, however, that the additional capacity is required to give an adequate cooling effect.

Room coolers cannot be installed in a haphazard fashion without careful calculation of the heat load and cooling requirements of the individual job. Number of windows and doors, room area, sun-load, lighting load and probable maximum load of human heat—in other words, the number of people normally inhabiting the room must all be taken into consideration to insure the room cooler unit delivering adequate cooling performance. Manufacturers have simplified these calculations so that the average dealer has little difficulty in arriving at exact estimates for each particular job.

General Electric Here's a new unit air conditioner of the air-cooled type. Air from outside is brought in through a window duct by a separate fan to cool the refrigerant in the condenser. It is semi-portable and has a cooling rating of about two-thirds of a ton which can be increased to one ton by adding a small water line. But no drain connection is necessary. Its cooling capacity is about 8,000 B.t.u. per hour.

Kelvinator These self-contained or cabinet type room coolers come in the water and air-cooled types and provide all the functions of cooling, de-humidifying, cleaning and circulating air. In addition, ventilation is achieved by bringing fresh air in from the outside. One-half and one-ton cooling capacity is available in different models.

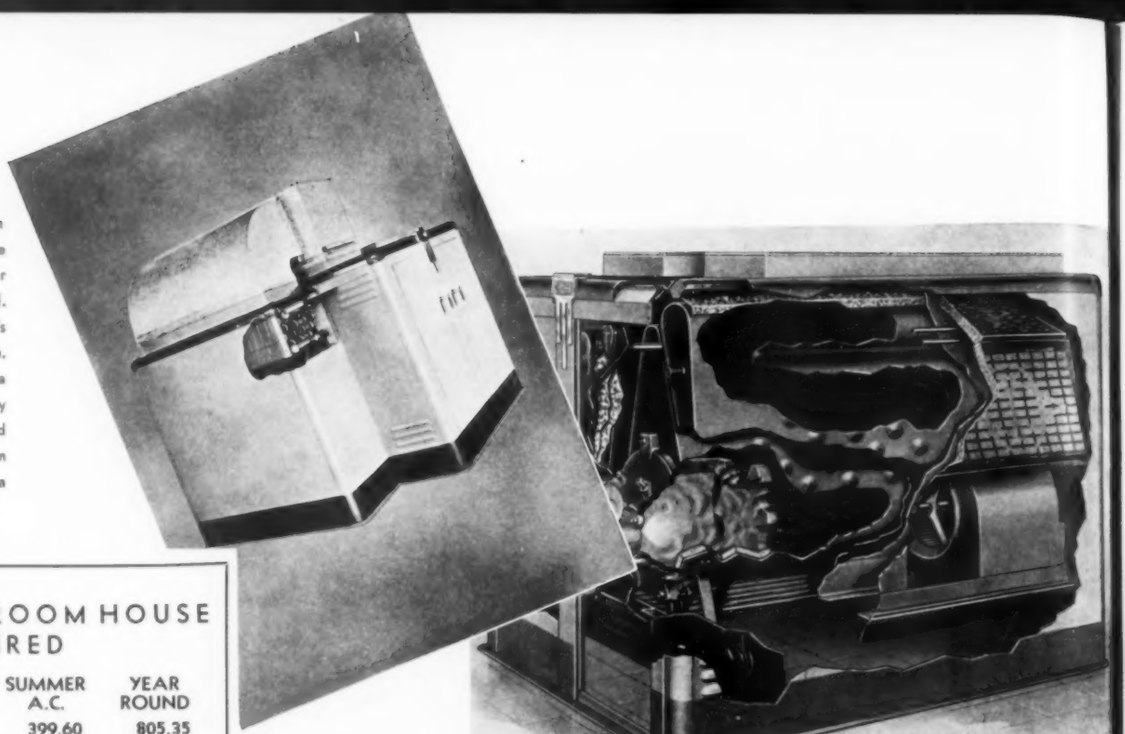
Westinghouse Here is an air-cooled type of self-contained room cooler which cools, dehumidifies, cleans and circulates the air. It has a hermetically sealed compressor, thermostatic control to guard against over heating and has a capacity of ½ ton.



Johnson This is a smaller version of the self-contained room cooler. It is designed to sit on the window sill and the cooling is accomplished by circulation of outside air over a large condenser. A 1/3 horsepower motor drives the compressor and condenser fan. Its cooling capacity is 4,000 B.t.u. per hour and it costs about $160.

Norge The room cooler shown here is the evaporative, air-cooled type. Room temperature air is drawn into the unit by fan through air filters and cooling coils. The refrigerant in the compressor is boiled by heated air and cooled by evaporation of water sprayed over outside of condensing coil. It has ½-ton capacity.

A Year-Round Job . . . In the unit shown (Delco-Frigidaire) at the right, complete year-round air conditioning is achieved. For heating, the unit is either oil- or gas-fired. For cooling in summer, evaporating coils and condensing unit perform the function. Circulation and cleaning of the air is a year-round function. Extreme right cut-away shows arrangement of filters, blowers and combustion chamber. Below are figures on installations, providing conditioning for a 6 room house.



CONDITIONING 6 ROOM HOUSE DIRECT FIRED

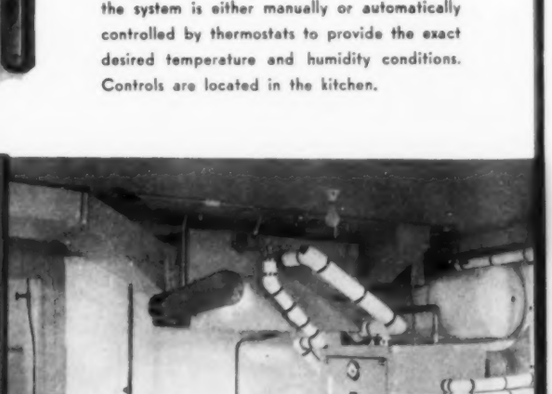
	WINTER A.C.	SUMMER A.C.	YEAR ROUND
Product	405.75	399.60	805.35
Sheet Metal	330.00	20.00	350.00
Electrical	17.00	15.00	32.00
Plumbing	4.00	7.00	11.00
Htg. Installation	101.00	.....	101.00
Ref. Installation	.....	110.76	110.76
	857.75	552.36	1410.11

SPLIT SYSTEM

	WINTER A.C.	SUMMER A.C.	YEAR ROUND
Product	548.25	399.60	947.85
Sheet Metal	330.00	.....	330.00
Electrical	25.00	15.00	40.00
Plumbing	34.00	7.00	41.00
Htg. Installation	140.00	.....	140.00
Ref. Installation	.....	100.76	100.76
	1077.25	522.36	1598.61

Central Systems

Complete Control . . . In the unit shown below, the system is either manually or automatically controlled by thermostats to provide the exact desired temperature and humidity conditions. Controls are located in the kitchen.



Year-Round Air Conditioning in an $8,000 House . . . Here is a good example of a complete, year-round air conditioning system for the type of medium-size house selling from $8,000 to $10,000.

The automatic heating system is designed to burn oil, gas or coal. The heated air passes directly from the furnace into the air conditioning unit, seen just above it, where the air is filtered and circulated through the duct system shown in the other photograph. The air conditioner adds humidity to the warmed air in the winter season while, in the summer, a separate compressor unit takes care of cooling and de-humidification. The whole package is automatically controlled by thermostats on the upper floors of the house.

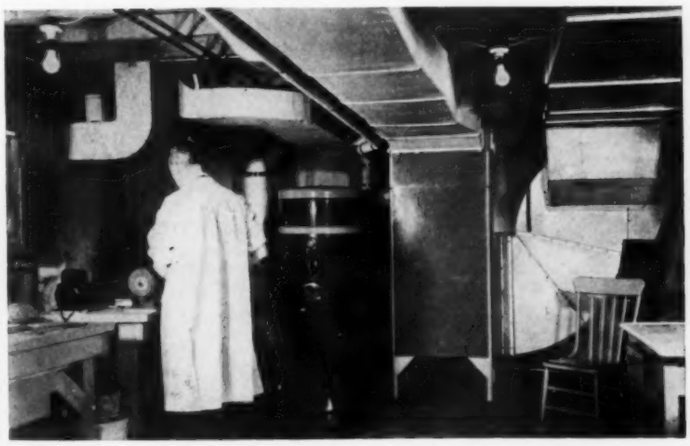
In installation such as this, primarily designed for new houses, can be adapted to older houses providing that proper insulation is installed, window spaces are caulked and the proper type of duct system is present or installed.

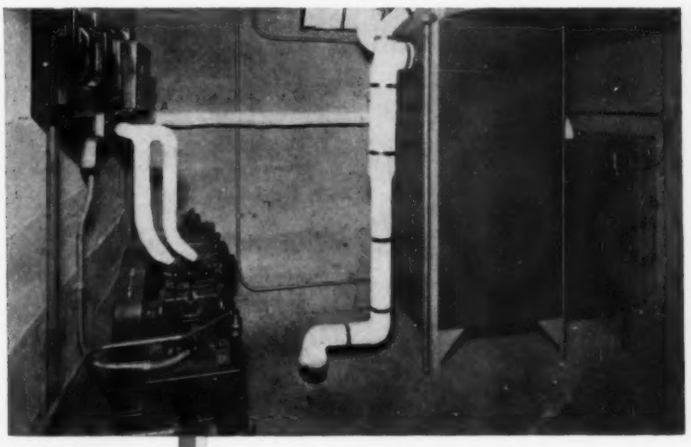
TYPICAL AIR CONDITIONING COST BREAKDOWNS IN SOUTHERN HOMES

APPROX. VALUE OF HOUSE	CONTENTS IN CU. FT.	TYPE OF CONST.	INSULATION USED	TYPE OF COND.	SELL. PRICE OF JOB	DUCT-WORK & GRILLES S.P.	EQUIP. (CARRIER) S.P.	ELEC. WORK S.P.	TANK FRT. INSTALLATION S.P.	SERV. RESERVATION
$15,000	25,000	2-story Brick Veneer	4" Rock Wool on Ceiling	Winter	$1320	$320	$800	$32	$138	$30
11,000	17,000	2-story Brick Veneer	4" Rock Wool on Ceiling	Winter with Hi-Lo Outlets	$1220	$350	$651	$35	$154	$30
12,000	19,000	Bungalow Brick Veneer	4" Rock Wool on Exp. Walls & Ceiling	Winter	$1180	$294	$665	$35	$161	$25
17,000	30,000	2-story Brick Veneer & Frame	4" Rock Wool on Exp. Walls & Ceiling	Winter with Hi-Lo Outlets	$1650	$490	$910	$35	$175	$40
12,000	20,000	2-story Brick Veneer	4" Rock Wool on Ceiling	Winter	$1220	$250	$795	$30	$120	$25
15,000	25,000	2-story Brick Veneer	4" Rock Wool on Ceiling	Winter	$1420	$350	$861	$35	$140	$34

for Air Conditioning

— Courtesy Carrier Corp.





Winter Air Conditioning Only . . . In this picture, taken in an actual installation in a Westfield, N. J. home, an air conditioning system is shown which consists of an oil furnace (G-E) and a winter air conditioning unit which humidifies, cleans and circulates the air through the ducts. The basement has been made into an attractive workshop for the home-owner.

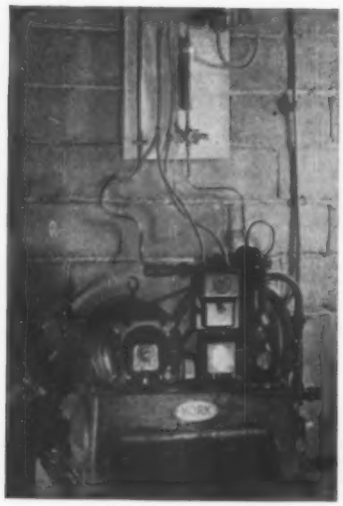
A $15,000 House Completely Air Conditioned . . . In this Louisville, Ky. home, an oil furnace (not shown in the photograph) supplies the heat and the air conditioner shown above right humidifies, cleans and circulates the air in the winter time. At the left is the condensing unit for cooling and de-humidifying in the summer.

AIR CONDITIONING EQUIPMENT AVAILABLE IN VARIOUS PRICE CLASSIFICATIONS

PRICE RANGE OF HOME	LIST OF MODERNIZATION ITEMS	AVERAGE MINIMUM COSTS EQUIPMENT RETAIL COSTS	INSTALLATION COSTS	DUCT WORK COST	TOTAL INSTALLED RETAIL COSTS
$4,000. to 5,000.	Conversion Oil Burner	$190.00	$100.00		$290.00
	Stoker	200.00	60.00		260.00
	Indirect System Winter Air Conditioning	525.00	200.00	$150.00	875.00
5,000. to 9,000.	Direct Fired Winter Air Conditioning	425.00	125.00	150.00	700.00
	Room Cooler	335.00	25.00		360.00
	Conversion Oil Burner	190.00	100.00		290.00
	Stoker	200.00	60.00		260.00
	Year Round Air Conditioning Indirect Heating	825.00	300.00	175.00	1,300.00
	Indirect Heating Winter Air Conditioning	525.00	200.00	175.00	900.00
9,000. and over	Direct Fired Winter Air Conditioning	425.00	125.00	175.00	725.00
	Room Cooler	335.00	25.00		360.00
	Conversion Oil Burner	190.00	100.00		290.00
	Stoker	200.00	60.00		260.00

Courtesy Kelvinator Corp.

Work CENTRALSY



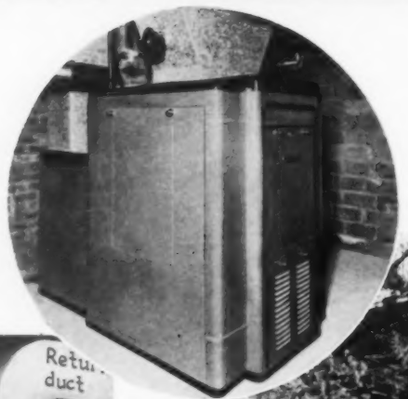
A Year-Round Installation in an $8,000 House . . . A good example of air conditioning for the small house whether it be new or old, is this installation in a home at Braddock, Pa. This unit (York) furnishes heated, humidified, cleaned and circulated air in the winter and cooled, dehumidified, cleaned and circulated air in the summer.

The 5,200 cu. ft. of air volume in the house is heated with an oil-fired warm air furnace and for summer conditioning a 1½ horsepower condensing unit, connected to the air conditioning unit built into the furnace, provides summer cooling. The whole job cost approximately $650.

A variation of this system may be installed by air conditioning only a part of the house at a time—the lower floors in the daytime, for instance, and the upper floors at night. In this case a smaller condensing unit—about 1 h.p.—would be sufficient.

If You Want the Whole Package . . . Below is a typical year-round air conditioning system for the home. If you live in a home that has warm air, direct-fired heating system, fed through ducts, this system is not too expensive to install.

The central part of this unit is the oil-fired furnace compartment (or it can be gas-fired, depending on what you want or what fuel is cheapest in your locality). The unit on the left houses the condenser for summer cooling. From this, when the unit is installed, refrigerant lines lead to a cooling coil compartment which is not shown in the photograph. On the right side, is the blower compartment which is used in both winter and summer air conditioning. At the right is an actual installation. (Westinghouse)



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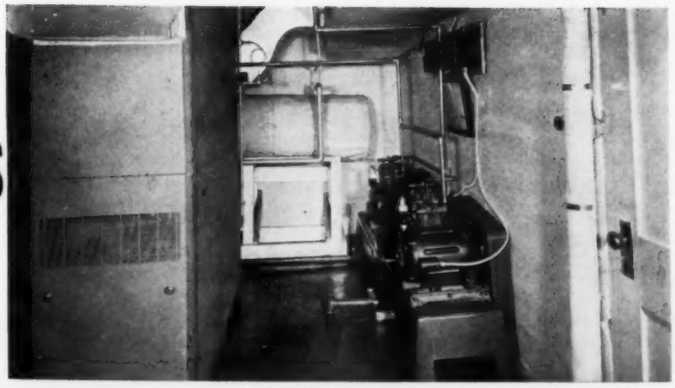
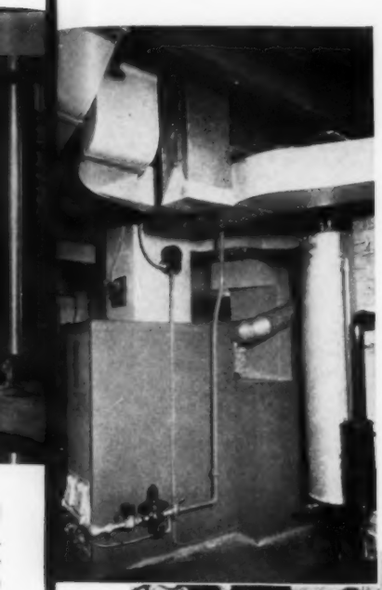




Heating in Winter, Cooling in Summer, Conditioning Year-Round . . . In the three pictures shown here, a complete air conditioning system for year-round comfort is shown and an evaporative condenser, located outside the house to conserve water consumption used in summer cooling.

The main unit consists of a boiler and burner, located in the lower half of the unit and an air conditioner, consisting of humidifying, cleaning and air circulating equipment, in the upper half of the unit. In the rear may be seen the hot water tank and, at the right, the condensing unit for summer cooling.

The basement, somewhat larger than the average has been transformed into a billiard room. Ducts for conveying the conditioned air to various parts of the house are suspended from the ceiling. In the third picture, is the evaporative condenser for saving water used in summer cooling. In this unit, water condensed from the air in the summer de-humidifying operation, is stored and used over again, making it unnecessary to exert a continual demand on the domestic water supply. A complete installation of this type would run to approximately $2,500. (Carrier)

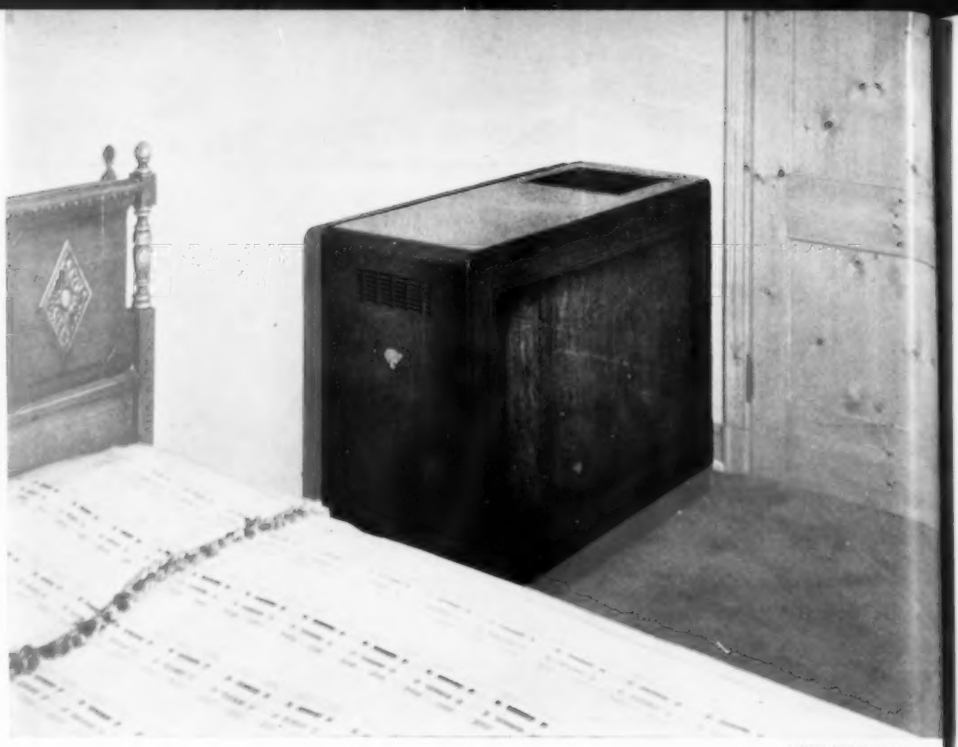
This Old House is Air Conditioned . . . In the house shown here, typical of thousands of frame houses throughout the country, a gas-fired winter air conditioning system has been installed for modernization. This means that the heating system is automatic, burns gas as a fuel, and the heated air is humidified, cleaned and circulated evenly throughout the house via the duct system — shown in the photograph just over the air conditioning unit. (Fox Furnace)

The addition of cooling coils and a compressor would provide for summer cooling too. Typical of a good air conditioning modernization job, it cost only $485 complete. Of this amount, the air conditioning unit alone cost $225 and the installation of ducts, registers and grilles cost $260.

It's Small—But Air Conditioned . . . There is nothing to distinguish the house (right) from hundreds like it in every community. Judging from its appearance you would say that it had an old boiler at best, for heating purposes. Well, it has a boiler for heating purposes and it's not even automatic. It's hand-fired and coal is the fuel burned. And yet it is an air conditioning unit, too. Built right into this boiler are provision for humidifying, cleaning and circulating the warmed air for winter air conditioning. (Fox Furnace)

The whole job cost $399 complete. Of this $179 went for the hand-fired coal air conditioning unit and $220 for the ducts, registers and grilles.

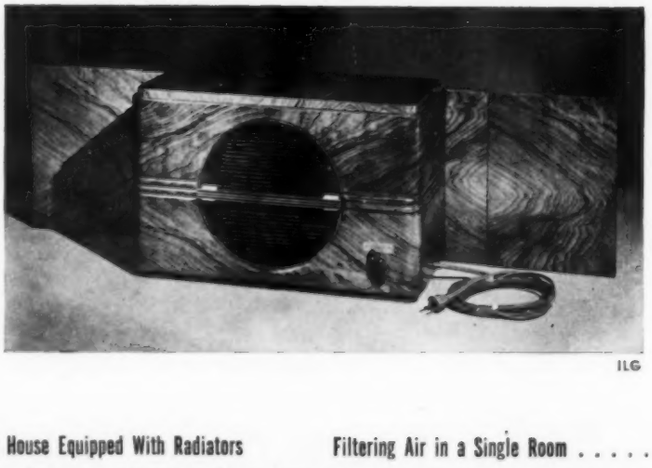
A Built-in Humidifier . . . In this particulars unit (Apex Zephyr-Air) designed to humidify the air within the house during the winter season and clean and circulate it throughout the area at the same time, a semi-permanent plumbing installation is necessary. It is piped to the water system making carrying and re-filling with water, as is the case with some other types of domestic humidifiers, unnecessary. A fan breaks a spray of water into a fine fog in this machine. This is diffused into the heated air.



APEX ZEPHYR-AIR

HUMIDIFYING and CLEANING *the AIR*

THE central air conditioning system provides for all the primary functions of air conditioning. But sometimes the customer cannot see his way clear to do the whole job at one time. Shown on this page are some popular types of air conditioning units which perform one or more operations in controlling air. They are portable, inexpensive and provide for one or more of the humidifying, cleaning (filtering) and circulating of air in a single room or more.



ILG

BURNAM BOILER

The House Equipped With Radiators

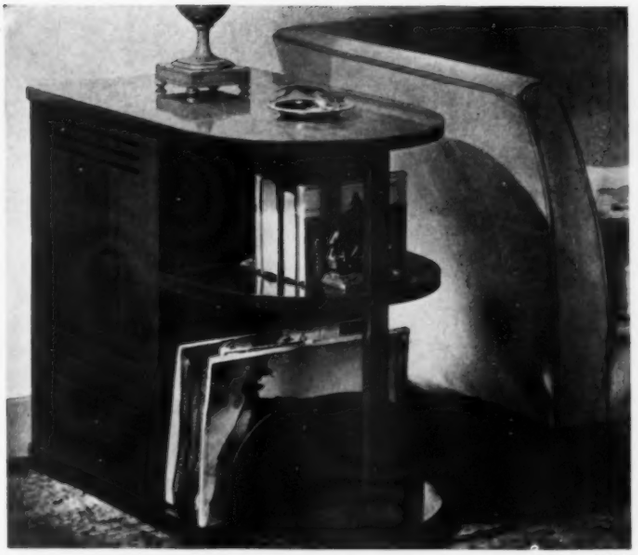
A good proportion of existing homes have radiator systems employing steam or hot water. Now, all these radiators do is heat. The air is not cleaned, it is not circulated throughout the room by positive control and it is not humidified.

The unit described here, replaces the radiator. It takes up no more room, is installed the same, but has this difference: the air is humidified, it is circulated, and it is cleaned. In the summer it operates, too. But it does not de-humidify or cool as a true air conditioning system does. It merely circulates the air in the room which gives a cooling *effect*.

Filtering Air in a Single Room . . . . . .

We have seen that one of the primary functions of year-round air conditioning is cleaning the air with some type of filter.

Here is a new and attractive type of air filter which consists of an electric fan and a filter unit. Dust, soot, plant pollens, etc., are filtered out of the air with about 98 per cent efficiency. A unit such as this is portable and can be used with any sash window. An air-flow regulator adjusts to the volume of air required although maximum capacity is set at 250 cu. ft. per minute. The grille on the front can be changed to allow the air to flow in any desired direction.



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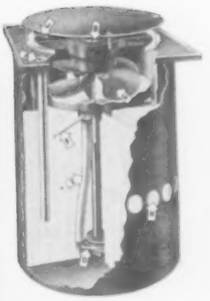


Adding Moisture to Dry Air . . . Another type of unit which performs a humidifying job in winter apart from any central system is the device shown here. It is a nice piece of furniture in itself, resembling a tab'e type radio. It employs a vapor-type unit generated by a heating element. The water compartment holds 3½ gallons which vaporizes at 1.2 pints per hour. When the water supply is exhausted, the unit shuts itself off automatically.

HEXCEL

HUMIDAIRE

A Humidifier in Your End-Table . . . One of the objections to many air conditioning units which perform one or more of the primary functions is the space they take up for no obvious purpose. Here is one unit which humidifies, circulates and cleans the air in a room, built into an attractive end-table thus serving a double-utility purpose. The "works" of the unit are shown in the smaller photograph. Other models are available in different sizes.

A Humidifier Installed in the Basement . . . . . The humidifier shown here may be hung from the ceiling rafters of the basement and connected with the domestic hot water supply. A flexible pipe runs from the top of the humidifier through to a floor outlet under the radiator; 125, 150 and 500 watt element provides humidity from the surface of the water. In a unit like this the amount of humidity added to the heated air may be controlled by means of a 3-heat switch.

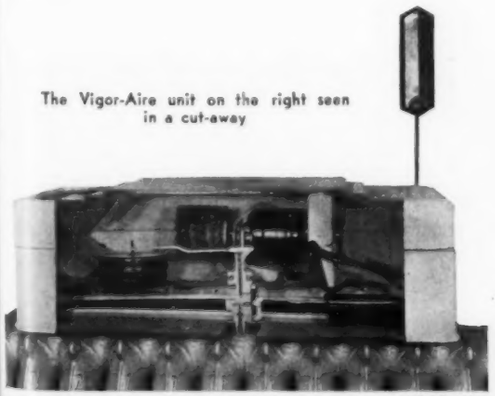
Simple Humidification in Winter . . . The principal functions of winter air conditioning are heating humidifying (adding moisture), cleaning (filtering) and circulating the air. It is possible to obtain all these functions of winter air conditioning without monkeying with the central heating system in any way. Granted, of course, that you already have a central heating system.

The unit described here, the principal function of which is humidification of the air, performs all the other functions—cleaning and circulating. It comes in a compact box and can be mounted right on the radiator in the room. Its capacity is sufficient to humidify up to 25,000 cu. ft. of air which is a pretty big area. It evaporates up to 10 gallons of water a day if the conditions under which it operates make so great a demand necessary. It is thermostatically controlled and therefore completely automatic—when the proper degree of humidity is achieved, the device shuts itself off. When that degree of humidity drops, the device starts itself again.

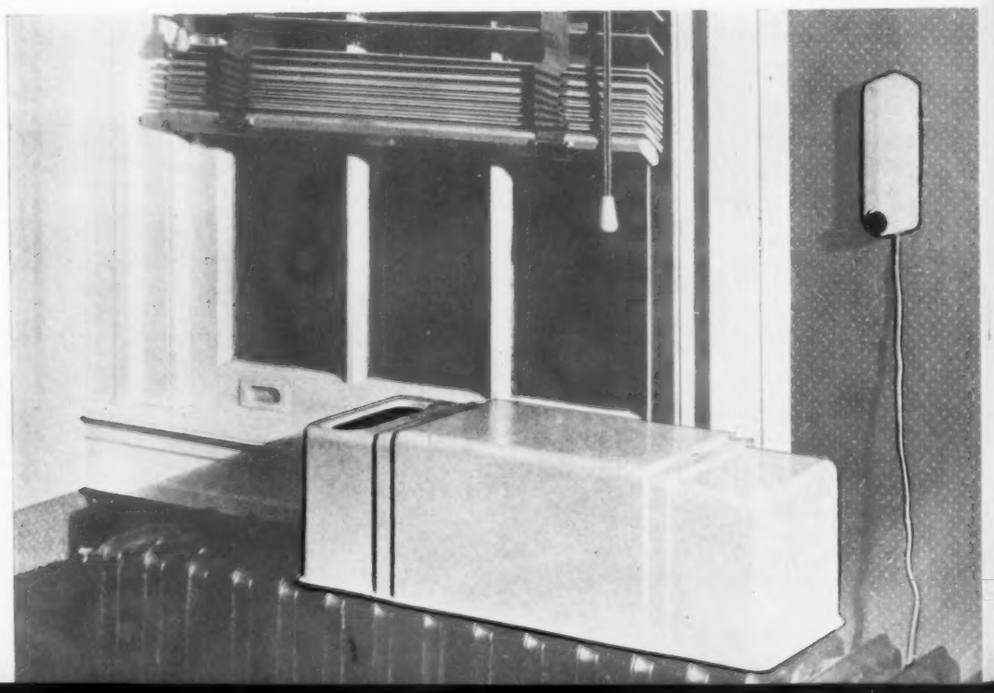
One is sufficient to take care of the average house and the cost is about $70.

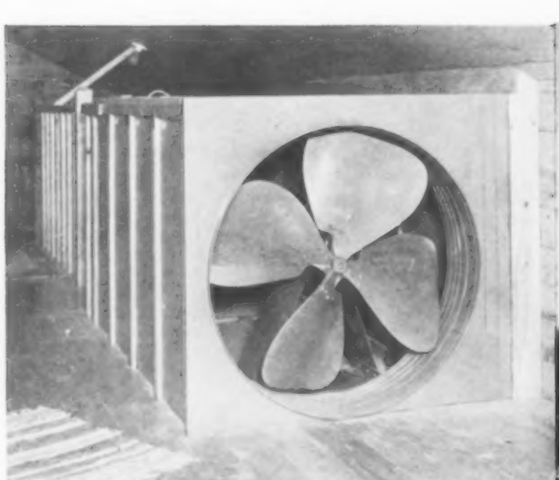
VIGOR-AIRE

The Vigor-Aire unit on the right seen in a cut-away



VIGOR-AIRE

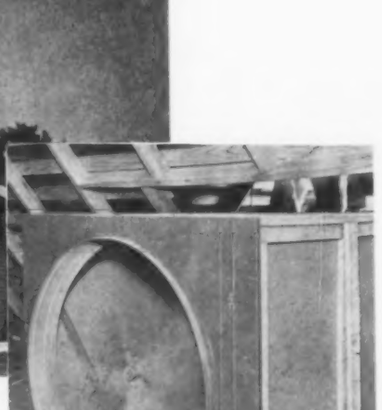




Size of the House is No Obstacle . . . It should be apparent from a study of the pictures reproduced on these pages that the size of the house is no obstacle when it comes to attic ventilating fan installations. It has been said that houses costing from $5,000 to $100,000 are equally well served. These two exterior photographs of residences were taken in Houston and both are attic fan equipped. Grilles to the lower floor, where the sleeping quarters are located, are shown as is a typical attic fan housing in one of these houses. Photos from Air Controls, Inc.

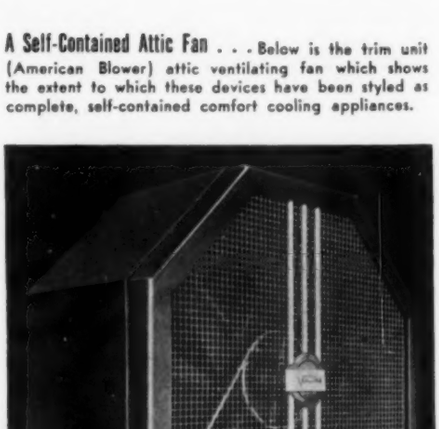
COMFORT C

A Package Job . . . This photograph of a Viking attic fan emphasizes the compactness of the summer cooling unit. It comes complete with vent-box, fireproof trap door, fusible link and safety-switch, low resistance ceiling grille and automatic time switch.



Building the Fan Housing Outside . . . In the pictures shown here, the house had a gradually sloping roof with no finished attic and, consequently, no attic windows. In order to create the proper ventilation exhaust, it was necessary to construct a special housing for the fan by cutting through the roof. The job is a simple one, however, and sufficient space exists under the roof to install the fan housing, seen in the other picture with the attic fan in operation.

A Self-Contained Attic Fan . . . Below is the trim unit (American Blower) attic ventilating fan which shows the extent to which these devices have been styled as complete, self-contained comfort cooling appliances.

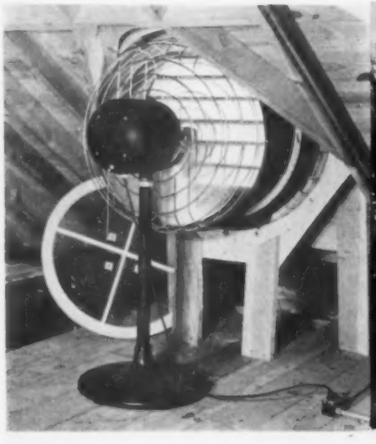


This Fan is no Midget . . . This picture of an American Coolair Attic ventilating fan, installed in a large house, will give you some idea of the size of the fan itself and the housing necessary to do a real comfort cooling job.

How An Attic Fan Works . . . At the right is a cut-away of a house showing how an attic fan, mounted over an open grille, draws air up from the rooms below and exhausts it out the attic window. The small drawing shows fan installation.

T COOLING *With* Attic Ventilation

A Window-Mounted Fan . . . The house at the left, typical of many throughout the Southern states, is equipped with an attic ventilating fan such as shown on the extreme right (Buffalo Forge Breezair). In an installation of this type, the fan is mounted directly on the attic window which may be seen under the eaves of the house. This is a popular and economical type of installation.



Installation in a 10-Room House . . . Size and price of a house has little to do with the fact that attic ventilation, of sufficient capacity to provide at least two air changes a minute in the floor directly below the attic, will provide adequate comfort cooling during the summer months.

The cost of the installation, here shown in a 10-room house, complete with wooden louver, is about $175. In this case, there is no cost of installation involved because the fan comes complete with its own mounting and is installed directly at the window where a round, porthole type of outlet, fits the diameter of the fan-blade mounting. This window may be plainly seen in the photograph of the actual house inself.

Insulating the

Blowing rock or mineral wool into the floor spaces of the attic is one form of insulating the house for air conditioning. In this case, the attic will probably remain unfinished.

The removal of one of the clapboards of a house allows rock or mineral wool to be blown under pressure into the wall spaces.

This is the method employed with a stucco wall. Holes are bored, rock or mineral wool blown in under pressure and then the holes re-stuccoed.

ANY discussion of air conditioning the old home without consideration of insulation is idle. And this applies to central, year-round air conditioning, winter air conditioning without provision for summer cooling, or summer cooling alone by the room cooler method or by attic ventilation.

Insofar as air conditioning implies some form of automatic control of temperature and humidity conditions, insulation is in itself a form of air conditioning. In the winter it prevents heat seepage through the walls and the roof of the house and is instrumental in cutting fuel costs from 30 to 40 per cent according to reliable estimates; in the summer, likewise, insulation works to a reverse advantage—it prevents, or cuts down substantially, the seepage of outside heat through the walls and the ceiling into the interior of the house. Interior temperatures, through the use of insulation, may be 10 to 15 degrees lower in the summer than those prevailing outdoors.

Insulation, in other words, tends to create a more uniform, static air condition within the house which, with the addition of some artificial means of heating, cooling, humidifying or de-humidifying, cleaning and circulating the air, makes that control of the air conditions doubly positive, efficient and considerably more economical.

Obviously, it is more difficult to add insulation to a house already built than it is to do the

e Old Home

job at the time of construction. And yet the manufacturers of insulating material have been ingenious in their approach to insulating the old house. Three common types of insulation are employed: the rigid type which consists of pre-fabricated boards of one-half to one inch thickness; rock or mineral wool batts which may be installed in sections; the same type of material, rock or mineral wool which is manufactured in nodulated form—loose for blowing into wall spaces through a pneumatic tube under pressure; and blankets of vegetable fibre and other materials.

The roof of the house is the most important from an insulating standpoint because it is here that the effect of the sun is felt most during the summer months and because in the winter season, heat rises in the house and an uninsulated roof allows much of it to escape with subsequent high costs in fuel consumption. Fortunately, in the old house, the roof is the easiest place to get at from an insulation standpoint. Most old houses have an unfinished attic. Rigid insulation may be nailed over the studs, batts of mineral wool, cut to the exact width, may be inserted between them, or a combination of the two employed. In the latter case, wallboard may be nailed over the studs and rock or mineral wool in modulated form blown into the crevices behind. The floor of the attic may be treated in the same manner.

This unfinished attic lent itself admirably to modernization with rigid insulation. Above, is a picture of the job as it looked when the insulation was in place and the attic made into a livable room.

In this modernizing job, the old clapboards were left in place and rigid insulation nailed right over them. Over that went shingles. In the case of the roof, the old shingles were first removed, rigid insulation installed and the new shingles nailed down on top of it.

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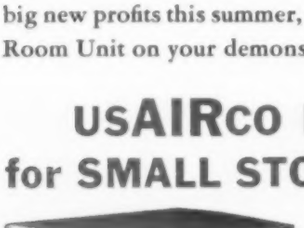

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